ICONEA 2011

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of Near-Eastern Archaeomusicology*
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Edited by Richard Dumbrill

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Prima la musica e poi le parole

Foreword

ICONEA 2011 was about the *'ūd* from its earliest sources to modern times, in the Near-East. The conference was held at the Chancellor's hall, Senate House, University of London. After traditional greetings from Paul Archbold, Director of the Institute of Musical Research, School of Advanced Study, of which ICONEA is a research group at the University of London, and welcome words from Irving Finkel and Richard Dumbrill, both co-founders and directors of ICONEA, the conference opened with the *'ūd* in Near-Eastern Antiquity. The session was chaired by Frédéric Billiet, Dean of the UFR of Music and Musicology at the Université de la Sorbonne, Paris IV. Piotr Michalowski spoke about '*Strings and Things: The Cultural Space of String Instruments in Early Mesopotamia.'* Regrettably his paper will not be published in the present volume. This was followed by Theo Krispijn with *The Lute in Ancient Mesopotamia and its Socio-Cultural Context.* Richard Dumbrill followed on with *The 'ūd from its hypothetical Uruk origins in the iconography and the philology, and subsequent developments during the Akkadian period.* Margaux Bousquet presented *A small lute from the Sukkalmah period of Susa and its reconstruction.* Amine Beyhom chaired the next session which was about the *'ūd* in the Near-East with contributions of Malcolm Miller: *The 'ūd as a symbol of Middle-Eastern Cultural Dialogue: Radical Fusions in Recent Concert Music in Israel;* Kiki Kennedy-Day: *The veil and the 'ūd: female musicians in the Islamic world.* The next session was chaired by Piotr Michalowski and was about the lute in Ancient Egypt. Ricardo Eichmann gave a brilliant delivery of *Extant lutes from the New Kingdom and the Coptic Period of Ancient Egypt.* This was followed by a controversial paper by Peter Zamarovský and Dagmar Krejčí: *An unusual depiction of a lute in the tomb of Rekhmire.* Irving Finkel chaired the next session which was about the *'ūd* in the Western and Eastern Mediaeval Periods. Amine Beyhom spoke about *Two persistent misapprehensions about the 'ūd;* followed by David Halperin: *The Rasā'il of the Ikhwan al-Safa: The seventh section on the making of instruments and their tuning, their construction and stringing.* Regrettably, David Halperin did not want his paper printed as he felt too much was borrowed from published material. Yaron Klein also withdrew his paper for the same reasons. He spoke about: *Musical instruments as laboratories: experience and experimentation in al-Fārābī's kitāb al-mūsīqī al-kabīr.* Richard Dumbrill chaired the next session with a paper from Frédéric Billiet and Xavier Fresquet: *Presentation of Musicastallis and Musiconis.* Frédéric Billiet discussed '*Playing the lute'in Mediaeval iconography';* Matthias Wagner: *The making of the modern 'ūd.* This paper is not published in the present volume. Jamie Ackers: *The instrument as inspiration: The idiomatic expression of Hans Neusidler.* The *'ūd* virtuoso Ahmed Mukhtar spoke and played to demonstrate *'ūd* practice in modern times. The paper will not be published because too much relied on the virtuoso's playing. This concluded the conference.

Most papers presented in relation to Ancient World music principles insisted that Ancient Near-Eastern theory must be force-fitted into the complex intricacies of Greek systems of which we know that they only emerged from 10th century A.D. textual evidence, as copies of copies in post-crusade monasteries of Christendom - the originals, perhaps, intentionally destroyed. Terms such as 'mode', 'heptatonism', 'diatonism', 'pentatonism', 'tonal', 'octave', and 'Pythagorean' were lavishly brandished during the conference without any reference to their etymologic and chronologic relevance.

In his *'The Wellsprings of Music', published in 1962,* Curt Sachs wrote: *'Reading oriental music from western staff lines is just as deceptive as reading oriental poetry in a twenty-six letter transliteration without array of "diacritical" dashes, tildes, dots and hooks. The staff lines and spaces entice the reader into a fatal misconception. The notes, let us say, of a Siamese melody, which has neither whole nor semitones, have no proper place anywhere on the staff. Forced upon and between the five lines, they deceive the reader with perfect fourths, thirds major and minor, and seconds major and minor where there are no such steps at all. They also deceive the reader by suggesting, in the conflict between the familiar lines we see and the unfamiliar steps we hear, that the exotic melodies in question are out of tune, in other words, that the West is right and the East is wrong...*

...In describing non-western music, be it oriental or primitive, one must strictly refrain from misusing incongruous concepts of western music. The terminology that has been learned in music schools applies to a harmonic structure of music and is inappropriate, indeed misleading and distorting in descriptions of non-harmonic, non-western music.'

Even earlier it was perceived that all music did not fit in our Western concept of heptatonism, of modality, of tonalism, of pentatonism etc. There are many other theories such as resonance, spiralling fifths, isotonism, Zalzalian, etc., none of them bowing to Pythagoras, to its octave, (a unit concept only dating to Juan Caramuel in 1647 A.D.!) to its tonality, its diatonism, or any of the principles that we think natural and with which, persistently, most of us have described, describe and will describe other musical systems, with well-etched imperialistic hangovers.

It has even been advanced that diatonism - but then which form of it? - was inscribed deep into our unconscious knowledge, but then how would we explain spontaneous - but consistent - tetra-, penta-, hexa-, hepta-, octa-, ennea-isotonic scales. In Uganda, harps are tuned isotonically. The Ganda people have a set of five equal intervals of about 240 cents, or iso-tetratonic. This equates to the salendro tuning of the gamelan of Java and Bali. The Ganda people also have an iso-tetratonic set. This, of course, suggests Oriental influences.

iii

Isotony, consists in a succession of four, five or more equal intervals. This is a very practical method as long as the octave is not taken as universal sampling container inside which, exclusively, the intervals must be contained and analysed. The performer proceeds by means of isotonic units, by ear, consecutively, and not by simultaneous octavial division. When K.P. Wachsmann, was curator of the Uganda Museum in Kampala, he described the procedure. The harpist pulls the highest string to its best sounding pitch. Next, he tunes down the adjacent string to a distance of about 240 cents without any standard other than his tonal memory, and goes all the way down over all the strings, as many as they may be. This method requires control and adjustment, but so do any other methods. To achieve this, the player rapidly plucks the strings I, 2, 3, which in succession give about 480 cents. He continues with strings 2, 3 and 4 and 3, 4, and 5 and finishes with 6,7 and 8. Analysis revealed errors of an average of 15 cents, which is negligible. The isotonic tunings in Uganda have parallels with African balafons. Two South African ethnies, the Bapende and Chopi, are in an iso-heptatonic set with seven equal intervals of about 171 cents, which amount also to the current genders of Siam and Burma. And how to explain the neutral and consistent Arabian third, played without the help of any fret? Would these sets not be also profoundly engraved in our unconscious knowledge, rather than Pythagorean sets would? It has even been advanced too, as early as the sixties, that the Babylonians had a diatonic heptatonic, Pythagorean ascending series of seven or eight modes, a concept which only arose with Western Ecclesiastical Modes, in the Dark Ages when the term was in turn, preposterously, allocated to Greek scales. The elucidation of Ancient Near-Eastern music theory must be researched in relation to musical theory and praxis of the East and not of the West as the contrary, again, would be preposterous, and preposterous it has been since 1960.

It is about time that musicology spoke in terms of 'pitch pools', of 'pitch sets', of 'systems' of 'constructions', of 'organisms', etc., and rids itself of subjectivist blinkers which have blinded both ethnomusicology for decades and archaeomusicology more recently. A lonely Urukean shepherd would have begun his melody without reference to any construction system other than pitches that satisfied his ear and that his mood expressed spontaneously. Why would this lonely man have been burdened with alien intervals with restrictions, with rhythms dictated by systems which only emerged three, four and even five millennia later. Music is the extension of man's emotions and is not the disciple of arithmetical laws which are only conventional means, and certainly not emotional ones. So before man made rules - whatever they may have been - there had been hundreds of thousands of years during which the unconscious transmission of emotions through music - as spontaneous phenomena - without recourse to what would become artificial Western theory - was the only rule. Music metrology is always the consequence of dictature. Ligatures on stringed instruments appeared with it and disappeared with freedom.

In K.C.F. Krause's infamous *Darstellungen am der Geschichte der Musik* (1827), we read with stupefaction that *'In Antiquity, which was the childhood of music, only simple, unadorned melody was known, as is the case today with such peoples as the Hindus, Chinese, Persians, and Arabs, who have not yet progressed beyond the childhood age.'* This is a truly Hegelian progressivism! How far have we come in our mature age, not to mention the profound ignorance behind the systems of Hindus, Persians, and Arabs singing as *'simple, unadorned melody'* they who leave simplicity to children's songs and to us, Westerners...

ICONEA 2012 will be about aerophones and 2013 will address to the problems arising from the transmission of texts of music theory in the Ancient Mediterranean World. It is hoped that this exploration will enlighten our epistemological debate on this fascinating subject.

Richard Dumbrill

In Memoriam Ernest Glenn McClain (1918 - 2014)

Ernest Glenn McClain died peacefully of natural causes at his home in Washington, D.C. on April 25, 2014. Born in Massillon, Ohio on August 6, 1918, he attended Oberlin Conservatory of Music and North-Western University and received his doctorate at Teacher's College in New York. He served in the South Pacific for four years during World War II. Ernest directed the bands at Dennison University and the University of Hawaii, and performed frequently as a clarinettist in Hawaii and New York. He was a professor emeritus of Brooklyn College, and retired to an idyllic 20 years in Vermont, where, with his wife Augusta, he hosted scores of visitors and hammed it up in local community theatre.

His enthusiasm for travel and adventure is exemplified by a family trip of 67 days in 1962. They camped 45 nights at most of the major national parks west of the Mississippi. A decision to hike the Grand Canyon was made on the spot and accomplished with only water, sandwiches and sleeping bags.

Ernest's passion for music came from his father, a self-taught violinist. As early as junior high Ernest directed bands, and as a teacher he was intense and funny.

His intellectual transformation was galvanized by the music faculty at Brooklyn College, in particular musicologist Siegmund Levarie and the extraordinary pianist and composer Ernst Levy. These two men taught him von Thimus' Pythagoreanism; this became his key to unlocking Plato's mathematical/musical riddles. In his books, The Pythagorean Plato: Prelude to the Song Itself; The Myth of Invariance: The Origins of the Gods, Mathematics and Music from the Rg Veda to Plato; and Meditations Through the Quran: Tonal Images in an Oral Culture, Ernest explored the idea that ancient tales and myths preserved and conveyed real numerical information about musical tuning; these were published during a decade of further collaboration with the philosopher Antonio de Nicolas. Ernest's discovery of identical or similar numbers and parallel mathematical constructs in much of the ancient Mediterranean Basin fed growing speculation about the historical continuity of a common spiritual tradition linking the microcosm of man's inner world to the macrocosm of his outer world. He hypothesized prime number harmonics as the key driver and shaper of historical mythology. Ernest contributed avidly to exhilarating discussions with scholars around the world, in particular with Duane Christensen, Richard Dumbrill, and others in the Online discussion group BIBAL, until his last day.

He was pre-deceased by his first wife, Mignon Henley McClain, and his second wife, Augusta Davis McClain. Survivors include his three children: Ron (and Holly) McClain of Takoma Park, Maryland; John McClain (and Clarisse Shechter) of Bristol, Vermont; and Pamela McClain of Richmond, Virginia; five grandchildren and two great-granddaughters.

A half century of studying the brilliance of the ancients was an exhilarating discipline. He woke up daily, to his last, believing his greatest discovery might come during that day. To Ernest, life was a glorious adventure which he shared with generosity and exuberance.

ICONEA 2011
Table of Contents

Bab Sharqi, Damascus, May 2011. Photograph by Richard Dumbrill

THE VEIL AND THE *ʿŪD* FEMALE MUSICIANS IN THE ISLAMIC WORLD[1]

*Kiki Kennedy-Day**

The second time I saw Nasser Shamma in Cairo, it was in June 2007. He had an *ʿūd* orchestra of 13 or 15 players with him. Two of them were women. The previous time I saw him, I was mesmerized by the music, but did not see it as something I could ever do. Now, listening to two women playing the *ʿūd*, I thought maybe I could learn it too. When I was seventeen I was infatuated with Andres Segovia and his Spanish guitar, but there were no teachers at that time in Cairo. The *ʿūd* was a second best. I was just finishing a teaching stint at the American University in Cairo and bought an *ʿūd* on *Sharia Muhammad ʿali*, the music district, before leaving Cairo.

Recently, while reading A.J. Racy's *Making Music in the Arab World*, I came across a reference to women musicians and *ʿūd* players in the mediaeval Islamic World. Racy says, *'In the mediaeval courts, many women excelled in singing and playing the ʿūd, some even amassing considerable fame and prestige[2].'* Racy's statement intrigued me, both because generally there is not a lot of information available about the social history of the medieval Islamic World and because women are so rarely dealt with.

As a scholar of Mediaeval Islamic Culture I

find that most sources depict women in a passive state. For example, a legal work about the many aspects of divorce discusses women as the recipients of action and how those actions affect their marital status[3]. Furthermore, whether they were *'free'* or *'slave'* had little influence on their ability to act. A young virgin is married at her male guardian's decision. Her silence is taken as assent. The history of women in Islam is so sketchy – sometimes it seems that between the 7th century *'Mothers of the Believers and Modern Women'* – there were no women in the Islamic World. As a refugee from Islamic philosophy, I did want to look for historical sisters – especially since the *ʿūd* had taken over my life.

My aim is to find the hidden women in history, to show them participating, to make them present. In the Islamic World, much of women's history is hidden. Gavin Hambly describes his goal as making women visible in the Introduction to Women in the Mediaeval Islamic World. He points out that historians have generally emphasized the harem, veiling, and polygamy as factors keeping women hidden[4]. As I have found in my researches for this paper, women are suddenly everywhere. If a female slave was playing for a ruler and his wife, he might have wanted the musician behind a curtain for several reasons.

My specific purpose is to investigate women as musicians playing the *ʿūd* in the mediaeval Islamic World. Evidence for the participation of women in the musical life at court exists in literary sources such as the *Thousand and One Nights* and in historical compilations, such as the *Book of Songs*. Textual accounts and evidence are scattered throughout literary and historical sources, as well as visually through paintings and drawings. This paper will concentrate on literary evidence, leaving the visual evidence for another time.

From reading the entries in the *Kitāb al-aghānī* (the *Book of Songs*), the reader is immediately struck that the emphasis is on singing, and the voice is the instrument nonpareil. The *ʿūd* - or any musical instrument - is secondary. This is borne out by *al-Fārābī's* analysis that vocal music is the highest form of music, as it includes words with meanings. The instrument serves to introduce a song, set the intonation, and provide musical bridges between

sections of the song[5]. *Farabi* emphasizes the fact that songs with words contain meanings in addition to the sweet quality of the music, he makes us see the emphasis on poetry. The singer is performing poetry. This stretches back to the Pre-Islamic tradition, where oral poetry was the most important of the literary arts. A singer is a composing poet able to write suitable poetry on the spot with the aid of standard literary devices. The instrument directs the listener to the voice.

Thus it appears that in the Middle-East instrumentalism developed as an art form in modern times. Contrary to reports of women's participation in Mediaeval Courts, modern musicians tend to be male. Women's continued exclusion from some forms of contemporary classical music is notable. For example, in *Omar Amiralay's 'Daily Life in a Syrian Village'* (1974), he films a Sufi music party, with men dancing and falling into a trance, but the participants are all men. From inside the room (the male viewpoint) we see the village women peering through a window; they are shushed together and appear to be standing on tiptoe in their eagerness to share the event. Women might have been behind a screen in the Mediaeval Period, but they were present; in the modern world women who play instruments are often banished altogether. Is behind a curtain in the same room, playing the *'ūd*, closer than through the glass looking in?

I begin my investigations of women musicians with the literary sources, starting with *Alf layla wa layla*. On the 867th night an unnamed *'girl' (sabīyah)* shakes 32 wooden pieces out of a green silk bag and fits them together to shape a playable *'ūd*[6]. (No tools are mentioned in the assembly process.) She plays the *'ūd* with her fingers, not a *rishi*. With her playing and singing, the woman seduces *Nūr al-Dīn*, who cannot contain his lust following her seductive song. While the description of fitting together pieces of an *'ūd* like a jigsaw puzzle into a playable instrument is whimsical, her skill on the *'ūd* appears to be realistic. Likewise the *'ūd* may have been played with the fingers[7].

Henry George Farmer mentions three named women *'ūd* players from the Arabian Nights. They are: *al-Badr al-Kabīr*, *Tawaddud*, and *Mahbūbah*. The first, *al-Badr al-Kabīr*, whose name Farmer translates as *'The Incomparable Full Moon'*

played the *'ūd* and sang so beautifully that *Mohammed al-Amīn* kidnapped her from *Ja'afar bin Mūsā al-Hādī's* home during a drunken escapade on the 392nd night. The following day he invited *Ja'afar* to his house and plied the guest with wine while *al-Badr al-Kabīr* sang from behind a curtain. Although *Ja'afar* recognized her voice, because of his nobility he did not show distress. On his departure, *al-Amīn* lavished money and jewels on him until *Ja'afar* allowed *al-Amīn* to keep her[8]. This is from the story *'Mohammed al-Amīn and the Slave Girl'*. The point of the story is that such fabulous music drives people to commit crimes. This is not the only story where an upstanding man is driven to bad acts, or at least lascivious thoughts, by a skilled *'ūd* player.

In *'Abū al-Husn and his Slave-girl Tawaddud'*, the author describes *Tawaddud*, another slave girl, on the 438th night, as incredibly educated on the finer points of Quranic exegesis as well about *maqāmāt* and other points of music. In fact, if one checks the description of a *nadīm*, given by George Sawa, it closely resembles the education she received. A *nadīm* was a male boon companion to the caliph, meant to be educated, entertaining and non-controversial, a companion the caliph could kick back with, relax and be entertained. Among the subjects a *nadīm* studied are: literature, music, theology, chess and backgammon, the same skill sets learned by *jāriyahs* who will entertain members of the royal courts[9]. It appears the *jāriyah* might have served the same function. *Tawaddud's* name translates as *'Showing Affection'*.

In the story *'The Caliph al-Mutawakkil and his concubine Mahbūbah'*, we hear that *Mahbūbah*, whose name means *'Beloved'*, is another *'ūd* player with outstanding musical ability[10]. She is portrayed as losing the caliph's affection through arrogance. Here we notice that *Mahbūbah* is beautiful and plays with a high degree of virtuosity. However, the caliph is still steps above her in status and she neglects to observe the social rules. There is no false equality here, everyone understands a slave must know her place. After both *Mahbūbah* and *al-Mutawakkil* have the same dream of reconciliation, he returns to her. When he enters the harem, he is overcome with the beauty of her *'ūd* playing and of singing verses she composed about him. In the interim

she has learned humility. They make up, and she treats the caliph with the respect due to his higher rank – she throws herself at his feet when he returns to her room. Incidentally, like all the female 'ūd players described in the *Nights*, *Mahbūbah* is beautiful, voluptuous, graceful and elegant. While the women are described in terms of general sexual attractiveness, there is also an emphasis on their musicianship. Whether it is historically accurate or not, the idea of women as accomplished 'ūd players appears to be the norm. Farmer also mentions that the male musicians named in the *Nights* were real historical characters[11]. This makes the reader think it is likely the women were also based on historical people. In fact, *Mahbūbah* appears in the *Kitāb al-'aghānī* and the story includes her relationship with *al-Mutawakkil* [12]. In the *'aghānī* version, *Mahbūbah* sees the caliph in a dream. She speaks to him and tells him how much she misses him. Later, she tells *al-Mutawakkil* that she saw him in her sleep, and sings him verses about it. Thereafter, he informs her that he too saw her in a dream. From previous work I have done on dreams in classical Arabian culture, it is very common for people to use dreams as a way to convey their deepest wishes and emotions in a less personal way[13]. If she desired to express her wish to see the caliph again it would be much more socially acceptable to say that she saw him in a dream. For a long time, it was common for the Prophet to appear to people in their dreams.

Moving out of folklore, into the literary sources, we find another story of an 'ūd-playing woman in *al-'iqd al-Farīd* of *Ibn 'abd Rabbihi* (d. 940 A.D.). In this story a man named *'Abd al-Rahmān bin 'abī 'ammar*, known for his piety, passes by the house where the singer and 'ūd-player *Sallāmah [al-Qass]* lived. He happened to hear her singing and stood transfixed by the gate listening to her. Her master *(Suhair bin 'abd al-Rahmān bin 'auf)* invites the listener to come in, and he refuses. Finally, after much importuning *'abd al-Rahmān* the listener enters the house. He stands to listen where he can see her, but she can't see him. However, *Sallāmah* feels his eyes on her and begins to sing him a song. He is infatuated with the singer. After an exchange of wishes for love, *'abd al-Rahmān* leaves to resume his virtuous life. He does say that *'If you saw her and her lute, when it appears and she begins to perform....you would think they were amidst her lute'.* He refers to

famous masters of the 'ūd who taught her, including *Ma'bad*, imaging them physically present inside her lute[14]. This story demonstrates how tempting music is to the soul of the virtuous man, which is one of the reasons that the Islamic religious scholars condemn music.

Another incident is reported in the work, *Hadīqat al-afrāh*, by *Shirwānī*. A visitor to Malaga in 1016 is unable to sleep because of the music from a zambra (a nightly music party) keeping him awake. In the garden the unnamed visitor sees slave girls playing various instruments, including a tanbur, an oboe and others, while off to one side sits another slave girl, who is an 'ūd-ist, holding her 'ūd in her lap *(hijr)*. Everyone's eyes are fixed on her as they wait for her to sing and play[15]. The writer who reports this incident also says he stood where he could see them (the performers) and they could not see him. After he left Malaga, he reported the experience to a friend who told him that the house belonged to a vizier, and the slave girl was a famous Baghdadi musician, one of the best singers, previously of the slaves of *al-Mansūr ibn 'abī 'umar* – slaves whom the vizier inherited after *al-Mansūr*'s death[16]. From this sketch we may observe that the 'ūd-ist was so famous she was widely known. We know this because his friend, not even in Malaga, immediately knew who she was.

Several women are mentioned by name in the *Kitāb al-'aghānī* (Book of the songs) by *Abū al-Faraj al-Isfahānī** (10th century A.D.). This well-known book is a record of Arabic songs up to his date, an encyclopaedic compilation of singers, with entries by name and a discussion of the person's traits. Among the most prominent are *'Azza al-Mailā'* and *'arīb*.

Azza al-Mailā, an early female singer in the *Book of the Songs*, was also a great 'ūd player, according to the musician *Ishāq al-Mawsili*. She died before 710 A.D. *'Azza' al-Mailā* was from Medina and she lived during the caliphate of *Uthmān*. The Umayyads were very well known for their pleasure-seeking and debauchery. Others said that in singing and performing on the *mi'zafa* and the 'ūd, she was among the best of men and women. Here the critic compares male and female musicians, without any concern that women are not capable of greatness in music.

'Arīb, from the 9th century, is a shadowy but

*Ali ibn al-Husayn ul-Iṣfahānī, أبو الفرج الأصفهاني *also Abu-l-Faraj Abu 'l-Faradj al-Isbahani, in the Encyclopaedia of Islam, (1996), but also Abu al-Faraj al-Iṣbahānī. Isfahānī is mostly used. (note of the editor)*

powerful figure, meriting a long entry in the book. Her name has sometimes been vocalized as *'uraib* previously, but a new editor *Ibrahim al-'abyari* in a 1970 edition, prefers *'arīb*, based on a verse where her name rhymes with *'ajīb*. If this verse does refer to the woman in question, the editor is correct as it forms an internal rhyme in the hemistich[18].

The entry for *'arīb* emphasizes her abilities as a singer, a composer of poetry, and a musician. *Al-Isfahānī* (the author of the *Book of Songs*) refers to the *'excellence of her striking'* in the first few lines, meaning striking the strings of the *'ūd*[19]. According to both Lane and Lyall (editors of the *Mufaddaliyāt*) the verb *'daraba'* with a musical instrument as the object means to play the *'ūd*. From entries in the *Kitāb al-'aghānī*, we see the noun *'ūd* is understood. She is obviously educated as the author says she knew theology *(kalaam)* as well. She also appears to be literate, as one source says he took from her notebooks and sheets of paper with her songs on them, presumably because she wrote her songs down[20]. *Al-Isfahānī* reports that *Ishāq al-Mawsilī* (d. 850) said to *al-Isfahānī's* father[21] that he did not see a woman play the *'ūd* better than *'arib*[22]. *'arīb* was knowledgeable about notes and strings - presumably meaning the melodies - and that she knew many *maqamat*. The author raves about the goodness of her voice and the excellence of her *'ūd*-playing; the perfection of her art. She followed the tradition of famous Hijazi singers, such as *Jamīla*, *'azza al-Mailā'* and *Sallāmah al-Zarqā'*. Many of her songs, in poetry form, are preserved in the *Kitāb al-'aghānī*, but no music.

The style of *al-'aghānī* tends to flatten out the personalities of the musicians *al-Isfahānī* talks about. For one thing each story in reported with a chain of transmitters *(isnād)*. This is the common Arabian style for all historical writings, we also see it in the *hadith* collections of the Prophet. Perhaps this tradition continues from the days of oral literature when the chain of transmission authorized information conveyed. Secondly, the author died in 967 A.D., while *'arīb*, who died in 841 A.D., had already been dead for over a century. One might not expect many personal details to remain. The interest was in the songs, more than the singers. Furthermore the tendency in Arabian biography is to ignore youthful indiscretions and to give a

series of reports rather than the narrative of a life. The biographical reporters avoided negative stories, they generally limited themselves to hints or suggestions of negative qualities[24]. They believed that if they merely suggested another author who reported the negative act it was neither necessary nor desirable to repeat the calumny. So while the author reports that *'arīb* was in the royal palace under many caliphs, the emphasis is on her staying-power and her skill at music, both as a performer and a teacher of her own slaves, rather than any moral question. Her behaviour was obviously within acceptable norms for her time and station. The information about each person in the *Kitāb al-'aghānī* accrues from many short narratives, each known as a *khabar* (a report of something the person did). To our minds this has a choppy effect, this style does not form a long connected narrative. We have pre-existing expectations based on our cultural biases that a biography will tell a linear, narrative story. The deficiency is in our viewpoint, not in the author's work.

Musicianship. As we have seen, there is an emphasis in the *Arabian Nights* on the musicianship of the slave women. The authors do not just state that women played the *'ūd*, they give you details. So of the *'ūd*-ist *Tawaddud*, they say when she plays the *'ūd* for *Harūn al-Rashīd* in a test of her skill, she strikes the *'ūd*, playing twelve tones (*naghamah* - or melodies) until the whole *majlis* is in a state of *tarab* - that is, high emotion, often ecstasy brought on by well-played music.

In his edition of the *Mufaddaliyāt* - an early compilation of the *Ancient Arabian Odes*, Charles Lyall includes a poem by *Bishr bin 'amr*. The poet refers to seeing two female singers, one playing the *'ūd*, singing call and response all night. The verse is notable for a couple of things. Firstly, it is from the oral, Pre-Islamic poetry. Secondly, we can see the historical precursor of the female slave girls playing the *'ūd* in the royal courts, and the two women playing the *'ūd* at the encampment. A long tradition of accomplished women *'ūd*-ists follows them. Lyall's translation of the line referred to is: *'and all night long a skilled songstress sang antiphonically with another like her, young and fair, brought up in luxury, and struck the resounding lute*[26].*'

The original Arabic text has neither a noun

for 'singer' nor for '*ʿūd*' included. The singer is indicated with a feminine adjective for dusky or domesticated (*dājinah*) and the *ʿūd* is included with the verb *tadrib (daraba), 'she struck, played,'* meaning the strings of an *ʿūd*, since it is in a musical context. One interpretation of this poem is that female, *ʿūd*-playing singers were commonplace, at least in Pre-Islamic or Early-Islamic times.

Another woman whose skill in playing the *ʿūd* was outstanding is *Ittifāq*. She was married to three Mamluk sultans, sequentially, in the 14th century A.D. *Maqrīzī* in his history, *Sulūk*, describes Sultan *al-Sālih Ismāʾil* (d. 1340 A.D.) meeting her thus[27]: *'The sultan was strongly smitten with a slave girl called Ittifāq'*. She was excellent at playing the *ʿūd*, and she learnt the art from *ʿabd ʿalī al-ʿuwwād al-ʿajamī*. Then *Jamal al-Kūfah* arranged it that when she was at the sultan's palace that he came to be sitting with her. (The last part of *ʿAbd ʿAlī's* name means he was an accomplished *ʿūd*-ist and a foreigner, perhaps a Persian.) It is interesting that the name of her *ʿūd* teacher is preserved; given her subsequent history of marrying sultans and surviving, she must have been a gifted musician. After describing her musical education, *Maqrīzī* says *Ittifāq* was skilled in playing the *ʿūd (maharat)*[28]. She was evidently from sub-Saharan Africa, as she is described as being *'deepest black'*. Whether for *ʿūd*-playing or companionship, *Ittifāq* received many jewels and presents from the sultans. One question does remain. It appears that she had children with one or more of the sultans. If her child was recognized, she should have been manumitted. This is similar to what happened to *ʿarīb*. It appears the sultans might not be in a hurry to release their favourite *jāriyahs* from bondage.

As mentioned earlier the style of biographical notes this information is drawn from requires us to follow the raw material of their lives and see what reasonable deductions we can make from it. The structure of each biographical record is to list the chain of witnesses who reported something about the subject and the particular piece of information. This puts the emphasis on the list of transmitters, a holdover from a society whose records were oral. The exciting part of this research is that the names of so many women who were accomplished musicians are preserved.

What can we learn from the musicians' names? The reported names are mostly characteristics like *al-Badr al-Kabīr* meaning *'Full Moon'* and *Mahbūbah* meaning *'The One Who is Loved.'* (The moon is considered the height of beauty in Islamic culture.) While men also had nicknames, these appear as objectifying names, referring only to the bearer's external attributes. At least in the sources, these women do not have typical Arabian names, like *ʿaisha* or *Fātima*.

Against such names, which emphasize their role as consorts in the harem, we have reports of their musicianship. A woman like *Ittifāq* who was married to three sultans in the 14th century was reportedly an outstanding musician. It sounds like these women had the prestige of 1960s rock stars.

Al-ʿutbī is quoted in the Encyclopaedia of Islam article on *laqab* as saying slaves could be given any name the ruler wanted, but sons were usually given tough names to terrify their enemies[29]. C.E. Bosworth further states that slaves were often given nicknames *(laqab)* replacing their original given names *(ism)*. From these remarks it appears that nicknames were given to slaves as a part of the depersonalizing process. In opposition to this, playing the *ʿūd* well can be seen as a way of asserting one's personality. However they may strive to play music the same, no two people will sound the same in phrasing, rhythm and intonation. Thus with their skill, musicians reasserted their person-hood. In a sense, too, music was a public skill (even if limited to the confines of the court) that could be heard and judged by many. It was not necessarily a private activity in the way other duties of the *jāriyahs* would be.

Terminology.

The word used for the young women described is either *sabīyah* or *jāriyah*. According to Lane, *sabiyah* indicates a young woman, girl or female child[30]. It does not appear to represent any particular status as to free or slave. This word is sometimes used in the *Nights*. The other term is *jāriyah* which means a girl or young woman according to Lane, it also means a female slave. In general the younger slaves appeared to be about 14 or 15, at least as described in the *Arabian Nights*.

While our tendency might be not to take

them too seriously, because of their youth, it is worth noting that even today many famous musicians began their public careers at 16. Any number of obituaries describe a musician who first plays at 6 or 9 and then begins public performances at 16. Consequently we may expect young women of 14 or 15 to be accomplished musicians.

Conclusions.

The purpose of my research has been to investigate whether women in the Mediaeval Islamic Empire could be considered serious *'ūd* players and accomplished musicians, rather than harem girls who are imagined as playing the *'ūd* in a minor, haphazard way. As we have seen, many details of their musicianship are preserved. *Ittifāq*, the African Mamluk slave, learned the *'ūd* from the teacher *'abd 'alī* who was no doubt well-known in his time if his name is remembered. From both the *Kitāb al-'aghānī* and the Arabian Nights, *Mahbūbah* is recognized as a musician, although the *Nights* emphasizes her *'ūd*-playing more than *al-'aghānī*. *Al-Badr al-Kabīr* (in the *Arabian Nights*) so enticed *Mohammed al-Amīn* with her beautiful voice and *'ūd* accompaniment that he kidnapped her, and paid *Ja'afar* off handsomely rather than return her. *Tawaddud* was thoroughly educated in the arts of *adab* (court etiquette), including knowing many melodies on the *'ūd*. In *al-'iqd al-farīd* a man well-known for his piety is seduced into lascivious thoughts by *Sallāmah al-Qass*'s *'ūd* playing and singing. He fights off seduction, but not before noting that she plays with the virtuosity of famous past *'ūd* players (who happen to be men). It appears *Sallāmah* has cast a spell with her *ūd* and her voice. In *Hadīqat al-afrāh* the most amazing *'ūd* player was evidently inherited by the current owner from her previous owner, who was a vizier. The writer begins by being irate that music was keeping him from sleep, but ends up hypnotized by the sounds.

In the *Book of Songs* we saw many women were listed, some of them from the early days, such as '*Azza al-Mailā*', a famous singer and *'ūd* player from Medina in the early 8ᵗʰ century A.D. The author compared her with men as well as women in her skill. *'arīb*, a century later, was another very famous singer. Stories of her disputing her slave status abound, but her musicianship kept demand high.

She served in the courts of numerous caliphs throughout her long life. Overall, the reports are of a very high level of musicianship, without distinction between men and women in skill. Numerous secondary sources point out that slave status or slave-origin did not prevent a person's participation in court society.

It is reported everywhere in the sources that many women were accomplished *'ūd* players. They were recognized as great *'ūd* players by their teachers *(ittifāq)*, by their patrons *(mahbūbah)*, for their education *(tawaddud)* as well as by professional musicians *('arīb)*. In the contemporary Islamic World, most of the *'ūd* players who take a public stage are men. However, we should not let the current state of affairs make us believe that it was always thus. Similarly we should understand that although today independent musicians who travel and play may be the norm, in this period many of the musicians were slaves. While a slave could be bought or sold or sent away without their consent, in many ways slaves played a prominent role in daily life. Similarly, girls destined for court were educated in a wide array of fields of knowledge, including music and playing the *'ūd*. Furthermore, although the sources always celebrate their beauty, they are also praised for their accomplishments. It appears obvious that sultans would ignore the children of their slaves, otherwise the slaves would have to be manumitted. This certainly is one area where a slave status was a hindrance, since women who bore children to their owners were supposed to be freed, according to Islamic Law.

My intent in this paper is to give an overview of women *'ūd* players in the Mediaeval Islamic World. I was amazed to see the number of women who were identified as *'ūd* players and the level of their playing. If we compare music to other aspects of Islamic culture: philosophy, literature, painting, and calligraphy there is no reason not to expect a high level in music performance as well. Since music is ephemeral in some ways - neither recordings nor scores of music from the Mediaeval Islamic Empires remain - we are dependent entirely on surviving written stories, from sources like *Alf laylah* and the *Kitāb al-'aghānī*. All indications are that the standards of performance were very high with both men and women participating.

This paper does not consider the status of

music under Islamic Law, for one thing the caliph's courts were notoriously uninterested in the 'Islamic lifestyle' when it came to drinking and other courtly behaviours. The information we do have relates to court life or, in some cases, the rich, what the ordinary people did is unknown. My intent in this paper was to make women's music present, without regard for social level. It appears that music, and often playing the *'ūd*, was a way for the women at court to stand out on their merits.

Notes

1 I would like to thank Richard Dumbrill for giving me the opportunity to present this paper at the 2011 ICONEA Conference.

2 Racy, A.J., *Making Music in the Arab World,* Cambridge University Press, (2003), p. 16.

3 *Ibn Hanbal* (d. 855 A.D.), *Chapters on Marriage and Divorce: responses of Ibn Hanbal and Ibn Rahwayh,* trans. by Susan A. Spectorsky, Austin, University of Texas Press, (1993).

4 Gavin, R.G., Hambly, *Women in the Medieval Islamic World,* London, (1999).

5 *Al-Fārābī* quoted by Sawa, G., in *Music Performance Practice in the early 'Abbasid era 132-320 A.H./750-932A.D.,* Institute of Mediaeval Music, Ottawa, (2004), pp. 105-6.

6 *Kitāb alf laylah wa-laylah,* Egypt, Bulaq 1321 AH/1903 A.D., v. 4, p. 81ff.; Burton, R.F., *The Book of the Thousand Nights and a Night,* Denver, (1899). (facsimile of Benares ed., 1885) Burton, v. 8, p. 280-1. (English text)

7 Ahmed Mukhtar gave a demonstration (December 1, 2011) of the development of *ūd*-playing from fingers to rishi at the ICONEA Conference.

8 Burton, *The Nights,* v. 5, p. 93-94 (392nd Night).

9 Sawa, *Music Performance,* p. 119.

10 Burton, v. 4, p. 291-2. Arabic, v. 2, p. 50-1.

11 'Music of the Arabian Nights', pt. 1, p. 181, *Journal of the Royal Asiatic Society,* October, (1944).

12 *Abū al-Faraj al-Isfahānī* (d. 967), *Kitāb al-aghānī,* ed. by Ibrahim al-Abyari, (Cairo,1969-79), v. 26, pp. 8917-22.

13 Kennedy-Day, K., 'Three dreams and their dreamers: the literary uses of dreams in classical Arabic', *SJANI, Journal of Literary Theory,* Shota Rustaveli Institute of Georgian Literature, Tbilisi, vol. 8 p. 95-105.

14 Farmer, G.H., 'Music the priceless jewel', *Journal of the Royal Asiatic Society,* No. 2 (1941), pp. 143-4; and *Ibn 'Abd Rabbih, Kitāb al-'iqd al-farīd; Lajnat al-Ta'lif,* 7 vols. (Cairo, 1940-68), v. 6, pp.16-7 (1949). Farmer translated the poem from which the quotation is taken.

15 Again, *darabat* is the verb, here meaning she played the *'ūd,* but it is not mentioned.

16 Racy, *Music in the World of Islam,* p. 77; and *Shirwani* (d. 1837-8), *Hadīqat al-afrāh, al-Matba'ah al-amirah li-malikha,* (1884), pp.127-8.

17 *al-aghānī,* v. 18, pp. 6447ff.

18 Short vowels are not written in Arabic texts, so for ancient names we can only speculate about vocalization.

19 p. 8667.

20 *Kitāb al-aghānī,* v. 24, p. 8228.

21 His father, *Ibrāhīm al-Mawsilī* (d. 804) was the most famous musician of the era, according to *Encyclopedia of World Music* article, v. 6, p. 295 (accessed online).

22 *Kitāb al-aghānī,* v. 24, p. 8226-74, here pp. 8226-7.

23 *Kitāb al-aghānī,* v. 24, p. 8226.

24 Reynolds, D.F., *Interpreting the Self: Autobiography in the Arabic Literary Tradition,* University of California Press, (Berkeley, 2001).

25 *Alf laylah,* v. 2, p. 215 (bottom). Burton, v. 5, pp. 193 ff.

26 Lyall, C.J., *The Mufaddaliyāt: an anthology of ancient Arabian odes,* Clarendon Press, Oxford, (1918-1924) (3 vols.), v. 2, p. 218 no. 71 (microfilm).

27 *Salih* ruled 1342-45. See *Maqrīzī* (d. 1442 A.D.) *Kitāb al-Sulūk li-ma'rifat duwal al-mulūk,* Matba'at Dar al-kutub, Cairo, (2006-07), v. II, pp. 662-4.

28 *Maqrīzī, Sulūk,* v. II, p. 715: 10-11.

29 Bosworth, C.E., 'laqab', EI[2] Brill online 2012 Reference, New York University, 27 July (2012).

30 Lane, F.W., *Arabic-English Lexicon,* Cambridge, Islamic Text Society, Cambridge,(1984) (reprint), 2 vols. see: *jāriyah,* pt. 2, p. 416; *sabīyah,* pt. 4, p. (1658).

THE 'ŪD AS A SYMBOL OF MIDDLE EASTERN CULTURAL DIALOGUE: RADICAL FUSIONS IN RECENT CONCERT MUSIC IN ISRAEL[1]

Malcolm Miller

In this article I trace the evolution of works incorporating the 'ūd from symbolic Orientalist evocations of Israeli music from the 1930s-50s (Ben-Haim and Boskovich) to the more authentic participation of the 'ūd in works of the 90s and later (Tsippi Fleischer, Menachem Wiesenberg, Michael Wolpe, Taiseer Elias, Hagar Kadima, Shai Cohen, and Yizhak Yedid), incorporating traditional improvisation, Arabic texts and multi-ethnic ensembles. I investigate the context and style of the works, their relationship to the 'ūd in world music and ask to what extent they embody a dialogue between cultures, relevant both to current aesthetic-political tendencies in Israel and the Middle-East and to the wider concerns of postmodernism in general.

Introduction

In our era of globalisation, the explosion of World Music since the 80s and postmodernism in general has led composers to experiment with traditions and sounds from different cultures in new combinations that distance themselves from the Eurocentric exoticism of the turn of the 19th and 20th centuries. Many Western-European concert traditions have evolved multi-layered and hybrid identities through adaptation to contrasting cultures, for instance those of the Near and Far-East. Some composers combine folk and art instruments to

explore their own identity, and others look beyond into multi-layered identities expressed in postmodern symbioses, as in the polystylistic, multi-linguistic, multi-faith, past-present, ethnic-minimalist, pop, rock mix of works such as Osvaldo Golijov's *Ayre* composed for Dawn Upshaw in 2004.

The range of influences contesting their space in such repertoire results in a locus of inter-cultural dialogue and exchange. An example is the incorporation of non-Western instruments and sonorities into Western genres, as evinced in recent music in Israel. Within that context my focus here is the symbiosis of the 'ūd and other Middle-Eastern instruments with Western ensembles, to shed some light on the intersections of a particularly rich nexus of identities. Recent studies of popular musics (Regev and Seroussi, 2004, Benjamin Brinner, 2009) and of art music (Jehoash Hirshberg, 2002) have stressed the multiplicity of contesting voices vying for the stage of national style in Israel, yet the complexion of the contest is one that is constantly shifting. My study thus has a particular socio-political context, yet at a broader level aims to highlight a fascinating instance the more general exploration of shifting identities which distinguishes contemporary music in the wider arena.

I – Aesthetic-Stylistic Background

The corpus I deal with, of music since 1990 presented in the Repertoire List (Appendix 1), is significant in two respects: firstly it is a unique repertory, which signals a growing awareness of Israel's identity as a 21st century multi-cultural nation in, and of the Middle-East. Secondly, it represents a landmark stage of development of the pluralistic canon of Israeli music that has evolved since its inception in the 30s and 40s (and earlier). The musicologist Jehoash Hirshberg has proposed that individual works by composers in Israel may be located '*… at different points on an imaginary line connecting two ideological poles: the vision of the East and the Heritage of the West*', and one can trace the gradual shift, over several decades, towards the vision of the East, in works that shift from the evocation and imitation of Arabian instruments to their explicit use and incorporation within the instrumental-vocal ensemble[2].

Certainly the group of some 40 composers who immigrated to British Mandate Palestine as a

refuge from Nazi Europe, often referred to as the first generation, explored novel means to evoke Eastern sound-worlds, to forge a collective nationalist style. Their quest was fuelled by contact with Oriental musicians such as Bracha Zefira (1910-90) and the Iraqi *'ūdist* Ezra Aharon (1903-90) and by the researches of Abraham Zvi Idelsohn (1882-1938) whose *Thesaurus of Hebrew Oriental Melodies* (1914–1932) proved a rich resource for composers and scholars alike[3]. Yet, whilst examples abound of works by composers such as Paul Ben-Haim (1897-1984), Alexander Uriah Boskovich (1907-64), Oedoen Partos (1907-77), Mordecai Seter (1916-94) and others which *imitate* the sounds of Arabian instruments including the

Example 1. Paul Ben-Haim, *Variations on a Hebrew Melody*, Theme: first phrase. Reproduced by permission, © 2001, Israel Music Institute, Tel Aviv, Israel.

'ūd, ney and percussion, there are virtually no works from that period which use them directly[4].

Two examples from early works by Ben-Haim, foremost proponent of what became known as the Eastern Mediterranean style, illustrate the imitation of Middle-Eastern instruments. The first occurs in his *Variations on a Hebrew Theme* for Piano Trio composed in 1939. The theme is drawn from an early 20th century Hebrew folksong *Moladeti erets Kna'an* (My Homeland, the Land of Canaan), an adaptation by Sara Levi-Tannai of a Bedouin song with a characteristic refrain 'Yalel, yalel' ('O Night'). For Hirshberg, the strings' 'downward

slide like a gentle sigh to an indefinite note' (Ex.1) evokes the sound of an Arabian flute (or *Nay*)[5].

The sonority of the *'ūd* is imitated in the spiky imitative dance of the Second Variation (Ex.2), where the piano's major and minor seconds, forming a delicate staccato accompaniment to the strings' theme, evokes the *'ūd's* plucking articulation and Eastern intonation.

Example 2. Paul Ben-Haim, *Variations on a Hebrew Melody*, Variation 2: Opening. Reproduced by permission, © 2001, Israel Music Institute, Tel Aviv, Israel.

A further example of *'ūd* imitation occurs in the tremolo of the '*Toccata*', last of his *Five Pieces* Opus 34 composed in 1943 (Ex. 3), a texture which is further developed in the second of seven movements in *Music for Piano* (1967).

Example 3. Paul Ben-Haim, '*Toccata*' from *Five Pieces* Op. 34 Edition Negen, Tel-Aviv, Israel, 1948.

In contrast to the 'collective nationalism' of Ben-Haim, was a more 'individual nationalism' of more modernist contemporaries such as Joseph Tal (1910-2007), Mordecai Seter (1916-1994) and Oeden Partos (1907-1977) (Hirshberg, 2008-9). Partos, principal viola in the IPO and a student of Hubay and Kodály who immigrated in 1938, developed away from the popular folkloristic uses of traditional Jewish and Middle-Eastern material to a more abstract contemporary aesthetic. The result is a compelling synthesis of Middle-Eastern and Western elements, as in Partos's *Fantasia for Piano Trio* (Ex.4). The syntax abounds in chromatic clusters, dense, dissonant harmonies and abrupt expressionistic gestures, yet generated by transformation of cantillation motifs. Here the evocations of the *'ūd* merge with the pointillism of contemporary music.

Example 4. Oedoen Partos: *Fantasia for Piano Trio*, Bs. 34-49. Reproduced by permission. © 2001, Israel Music Institute, Tel Aviv, Israel.

The works about which I am mainly concerned in this article stem from the more recent 3rd and 4th generations, composers born in the 1950s and 70s, for whom the issue was no longer how to 'create' a national style, but how to express their own identity through the multi-cultural influences around them. They had benefited from the work of both the pioneers and second generation, either born in Israel or who came as very young children from Europe, who deepened their understanding of regional Jewish and Middle-Eastern musical sources including cantillation modes, Arabian *'maqam'* (modes) and *'taqsim'* (rhythmic improvisation), yet also were influenced by the post-war avant-garde and electronic musics[6]. For those younger composers the Middle-Eastern soundscape, including the sound of Arabian instruments, was not viewed as exotic, but natural. As Oded Zehavi (b.1961) commented, '*I am a native of Jerusalem and acoustically, the air of this city is full of sounds for me: Oriental sounds, the sounds from the Sephardic synagogues, Eastern-European music – these are not exotic, they are not to be cited and analyzed as "sources", they are part of my very being[7].*' Similarly Aviya Kopelman (b.1978) has written '*In this I feel that living in Israel gives me an advantage. The blend of traditions and cultures is so deeply engraved into my surroundings, that eclecticism is no longer an aesthetic concept but a way of life. Tradition and modernity exist side by side and influence me effortlessly[8].*'

Within that context the use of the *'ūd*, rich in cultural symbolism, forms a potent piece of the jigsaw of composer's sound habitats, as reflected in Menachem Wiesenberg's comment that '*… as an Israeli composer who lives in Israel and is surrounded by the sounds of Arabian music I felt that it's only natural for me to use the instrument that symbolizes in a way this wonderful tradition[9].*' Shai Cohen concurred in his reflection that *"The soundtrack of the Middle-East is present in all the people that live in Israel. The 'ūd sound and the use of Arabian Modes had an impact on me when I was a child listening to the cantor in the synagogue[10].*' Similarly, music by Arab-Israeli *'Udist*-composers of recent generations, particularly Taiseer Elias, Emad Dalal and Wisam Gibran (mentioned in the Repertoire List) displays a wide variety of sources, drawing on Classical Arabian and Western art-music, Flamenco, Turkish, and other Middle-Eastern idioms, with a range of genres including *'ūd* solo, larger Arabian ensemble music, and often bordering into world music.

The intensified Middle-Eastern influences in Western art-music in Israel over the last 20 years may be explained by the amply-documented[11] shift in the 1970s and 80s towards increased recognition of the hitherto marginalised culture of Oriental Jews from Arabian lands and North-Africa. Their popular and religious music *Musiqa Mirzrahit*, Eastern music, at first neglected, became ubiquitous, increasingly infusing popular music in the 90s and later. In the same period partly as a result of the mediating role played by Arabian-Jews[12], Classical Arabian music also began to penetrate into Jewish-Israeli society, fuelled in addition by the greater optimism of the peace process leading to, and following the Oslo Accords in 1993. The Israeli scholar Essica Marks, in her survey of the performance of Arabian music in Israel[13], points to 1988 as a significant year which saw the first ever Arabian concert of Umm Kulthum at the prestigious Mann Auditorium, Tel-Aviv's largest concert hall: a sign of changing mores, and of the importance of individual idealism, as the promoter was to become founder of the annual *'Ud* festival that continues to attract international attention. One of the developments of that period was the formation of the Department of Eastern-Music in the Jerusalem Academy, instigated by Professor Dalia Cohen, (d. 2013) with Professor Taiseer Elias at its Director. Elias's collaborations with contemporary composers, including Wiesenberg and Wolpe, resulted in several notable new works, to be discussed.

Amongst the many Arabian-Jewish collaborations resulting were Bustan Abraham, Yair Dalal's projects, and larger groups like the Jewish-Arabian Youth Orchestra (formed in 2000), and Sheshbesh, the Arabian-Israeli Ensemble of the IPO (formed in 2000), all of which, as Benjamin Brinner has emphasised, together with new educational possibilities for Eastern music studies, brought fertile ground for new combinations[14]. The climate of greater intercultural cooperation fostered creative composer-performer relationships which, as throughout music history, produced fruitful results. Thus both Menachem Wiesenberg's and Michael Wolpe's works detailed in the Repertoire List were inspired by the *'ūd* virtuoso Taiseer Elias. As Wiesenberg recalled, *'I was very lucky to find Taiseer Elias who is a wonderful musician and who became a very close friend of mine. He really*

introduced me to the Arabian Art-Music and was indispensable in helping me understand the possibilities and playing technique of the 'ūd. His contribution to my music written for the 'ūd is crucial[15]'. Both Shai Cohen and Ronen Shapira of the younger generation worked closely with Wisam Gibran, also a younger *'ūdist*, composer and conductor.

II - Works for 'Ud – Some Case Studies

What is common to the majority of works incorporating the *'ūd*, sometimes within a larger group of Arabian instruments, is the adaptation of elements of both Middle-Eastern and Western traditions within a new symbiosis. All the works display contrasts of improvisation sections with fully notated sections, relating to both the Classical Arabian *'taqsim'* and the Western concerto *cadenza* traditions as well as jazz. The range of textures employed exemplifies, with frequent dialogues or heterophony, the European chamber music virtues of conversational equality and partnership, whilst at times all instruments join together in Arabian-style linear monody rich in ornamentation.

In general melodic material is generated by developing short motivic fragments with modal implications, often derived from Arabian *maqamat*. The resulting emphasis of Eastern linearity, modality and improvisatory ornamentation reduces the domination of vertical harmony.

Overall the new textures and linearity enables a coexistence of different tunings, allowing Arabian quarter-tones to enrich, rather than clash with, the tempered Western scales.

A good example of a recent work in which all these harmonic, textural, intonational and formal processes occur is Shai Cohen's *Collective Memory*, a seven-minute miniature composed in 2004 for the Sheshbesh Keynote Ensemble of the IPO (see Appendices 1 and 2, for Repertoire List and Shai Cohen's biography). The ensemble's Director, the eminent flautist Yossi Arnheim described the piece as *half Western-European modern and half Eastern'*, also observing that it was unusual for the Sheshbesh Ensemble which more frequently performs in a mainly Arabian style, reflecting the group's instrumentation[16].

Collective Memory is based on fragments from a very popular Lebanese song made famous by Fairouz, *'el-bint esh-shalabia'* (The pretty girl), salient motifs of the song tune pervading all the contrasting sections. There are many interactions and dialogues contrasting the Eastern and the Western instrumental trios, as well as much mixing amongst the groups.

It begins with a tutti chord which recurs at important structural moments, heralding a substantial 'ūd improvisation, overlaid with a fully-notated Western flute melody, of dreamy effect. Soon violin harmonics and whispered double bass join, whilst motivic fragments from the song are presented by the 'ethnic violin' and imitated by both *ney* and 'ūd. A reappearance of the opening chord, and question – answer dialogue between nay and flute leads to a slower exposition of the song motifs, with violin, counterpointed by flute, answered by 'ūd with *ney*. A third statement of the introductory chord, leads to more complex mixtures with Western harmony answered by Eastern monody. At this point a very ambiguously modal/atonal violin *cadenza* breaks through, shown in Ex. 5, ushering in an Eastern improvisation by each of the three Arabian instruments over a Latin drum and bass *ostinato* accumulating intensity until a dramatic pause introduces a very chromatic passage by the Western trio to contrast the Arabian monodic and ornamented ending for full ensemble together. The final poignant solo for 'ūd further develops the song melody; its unexpected ending on an unresolved pitch underlines an intriguing cross-cultural harmonic implication, inherent in the song melody itself.

Example 5 - Shai Cohen - *Collective Memory* (2004), extract from the improvisatory *cadenza* leading to the conclusion. Published by the Israel Music Center. Reproduced by permission, © 2004, Shai Cohen.

In *Collective Memory*, Shai Cohen retains and respects idiomatic gestures and tunings, giving ample expression to all groups, thereby expressing an attitude of cultural equanimity and striving for coexistence. As he says: *'I'm trying to give a microtonal freedom, a cultural freedom. I don't want anyone to change, just to be and share life together in peace and respect[17].'*

Yet there are examples of works in which identities shift, where instruments cross-fertilize with each other, as in Wiesenberg's *Trio Lamento* of 1996, a highly-charged *'in memoriam'* to Israel's erstwhile Prime Minister Yitzhak Rabin (1922-95), composed a year after his assassination in 1995. After the initial improvisatory taqsim, for 'ūd and cello over low piano clusters and glissandi, the piece builds to riveting textures, one of which (Ex.6) involves the 'ūd in an improvisational lament over melismatic, chromatic gestures in piano and cello.

Example 6 - Menachem Wiesenberg, *Trio Lamento* (1996), 'ūd improvisation. Reproduced by permission, © 2001, Israel Music Institute, Tel Aviv, Israel.

Towards the conclusion, the piano is instructed to improvise in a Middle-Eastern modal and rhythmic style characteristic of the 'ūd, its melismatic decorations set over a frenetic 'ūd and cello *ostinato*. The work's conclusion, shown in Ex. 7, features a racy passage in unison for all three players, in the style of Arabian ensemble music.

Example 7: Menachem Wiesenberg, *Trio Lamento* (1996), concluding passage. Reproduced by permission, © 2001, Israel Music Institute, Tel Aviv, Israel.

A similar symbiotic reversal of roles occurs in Wiesenberg's *Concerto for 'ūd, Piano and String Orchestra* of 1994, a substantial and exciting sixteen-minute span in three main sections[18]. During a free improvisatory section 'in the spirit of the taqsim' the piano takes on a Middle-Eastern character in its embellished single line and strumming effects. Orchestral strings then acquire ornamental, melismatic gestures, with chromatic-modal counterpoint set over meditative clustery piano harmonies and pedal point. The strings lines occasionally intertwine in counterpoint. The next section is a slower melodic dialogue between 'ūd and piano, leading to a faster dance section in a 10/8 metre similar to an Arabian *'samai'* form. Finally two extended virtuoso cadenzas, lead to a dialogual final fast section, the composer describes *'short brilliant passages played in unison in homage to Arabian music'*. In Wiesenberg's *Concerto for 'ūd and Symphony Orchestra*, 1999, a similar symbiosis is evident in the adaptation of the orchestral textures to the 'ūd gestures, as shown in a short extract where the 'ūd-orchestra interaction shifts from dialogue to doubling, shown in Ex. 8.

Example 8 – Menachem Wiesenberg, *Concerto for 'ūd and SO*, 1999. 116-121. Reproduced by permission, © 1999, Menachem Wiesenberg

It would be wrong to view any of these works purely through the lens of their East-West interactions, since they raise many relevant contemporary issues especially where texts are involved. Such is the case in the more Modernist and transformative styles exemplified for instance by Tsippi Fleischer, whose song-cycle *Girl Butterfly Girl*, of 1977, was the first Israeli song-cycle to set Arabic texts[19] with an original accompaniment for Middle-Eastern violin and *'ūd*.

Tsippi Fleischer's interest in Arabian culture stems from her home city, Haifa, where she was born in 1946 to Polish émigré parents and where her father, whose family had perished in the Holocaust, owned a shop selling pianos and radios. From the age of eight, the young Fleischer learned Arabic, at the Reali School, one of the first to teach Arabic, a trend which became more widespread after 1967. The love of linguistics was nurtured in her university studies, where she combined a music degree at the Rubin Academy, Jerusalem, studying with '2nd generation' 'sabra' composers such as Noam Sheriff, Yizhak Sadai and Tzvi Avni, with a BA in Arabic, Hebrew and Middle-Eastern History and postgraduate studies in Semitic Linguistics.

Fleischer's first major work was a radical and innovative symphonic poem inspired by a Lebanese poet, Shauki Abi-Shakra, *Girl Limonade*. Since its composition in 1976, this symphonic poem has been widely performed and even choreographed as a ballet. One of its innovative features was the use of Arabian styles and melodies, which Fleischer researched during field work with musicians in the Druze village Dalyat al-Carmel, where she lived for six months. Her ease with Arabic has enabled Fleischer over the years to become involved in education, especially with Arab musicians, at the Levinsky College of Education, Tel Aviv, where she has taught for 35 years, and in Haifa, where many of her students have become teachers in their communities.

In *Girl Butterfly Girl*, Fleischer creates a narrative unity from the four Lebanese and Syrian poems. '*The first is about the loneliness of a person in the desert, who, in the second, finds no place in his tribe and is thrown from place to place; in the third he goes mad, losing his contact with the world, and the last is a dream, a girl who dreams she is a butterfly. It is based on an old Chinese tale that was translated into Lebanese[20].*' Similar fusions are evident in works like the 1988 electronic piece *The Gown of Night*, (a setting of Muhammad Ghana'im), for magnetic tape and studio processed recordings of bedouin children hissing, whistling

and speaking, in their village of Rahat, north of Beersheva, and in the Arabian woodwind and percussion used in the 4th of her 5 symphonies, composed in 2000. Other works imitate but do not employ Arabian instruments.

In *Girl, Butterfly, Girl* and in the much more recent cycle *Moderna* (2010), the textures are complex, even avant-garde, the 'ūd and *ney* melding their *maqam*-based gestures within a highly chromatic or atonal fabric. Moreover Fleischer allows for improvisation in which the player can add ornamentation, duplication, octaves, and similar special touches. In *Moderna*, Arabic and Hebrew texts – by the Egyptian poetess Imam Mersal[21] intertwine, the sonic and ideological symbolism reinforced by the intertwining of Western cello with Eastern 'ūd, whilst the piano mediates, with chromatic clusters or chords[22].

In the first song, *'Soul'*, the cello and 'ūd are each asked to tap, like a *debka* beat, the vocal line is a type of *'sprechgesang'*, and the piano has rich cluster chords. The texture is very light and airy, the only pitch gestures being several cello harmonics *glissandi*, the *'ūd's* delicate *staccato* octaves, and several tremolos. The effect is very musico-theatrical, focusing on the voice, a kind of Middle-Eastern mini-*Pierrot Lunaire*. One can detect the slightly contrasting emphases of the Arabic and Hebrew.

The second song, *'City'*, alluding to a machine-rich metropolis, is fast and brief. A *moto perpetuo* piano part comprising rising and falling modal scales in octaves and occasionally thirds provides a constant background, robotic in effect, while at times the 'ūd etches out the melodic scale shape: over this the voice begins low and in slower notes thus giving the feel of the speeding motorcars. The cello appears later with a brief syncopated interjection, and again supplies a hooter-like high accented note before the song stops as if in mid-air! The vocal line's short melodic motifs robotically remain on one pitch and one rhythmic pattern, suggestive of empty streets and faceless 'remote control'.

The last song, *'Sex'*, is the most sensual, responsive to the tactile imagery of the poem. The dynamics are loud, in contrast to the hushed delicacy of *'Soul'* and the subdued sheen of *'City'*,

and thus the song is the climax of the mini cycle. The rising motif is echoed in the pitch climax of the voice at *'wal as nan'* (rising third). Then a longer Hebrew phrase at the end resumes a richer texture in all three strands and features aleatoric piano gestures, 'ūd trills and cluster chords.

Moderna was composed for performance at the Israel Women's Composer Group, founded in 2000 by the composer Hagar Kadima, its president until 2004. Kadima's own settings combining Arabian and Western instruments include *Once, Homeless Women*, and *Seven Women*. These are all compelling works full of intricate interactions and allusions within a contemporary style bringing in early music, music theatre and some eastern elements particular expressed in the 'ūd cadenzas.

'Once' – a setting of her own text translated into Arabic - was composed for a special concert of Palestinian and Jewish women musicians in 2004 titled *'Possible'*. The ensemble mixed Arabian singer, 'ūd, and Arabian violin with 2 violins and cello, and the text was self-composed, translated into Arabic by a colleague, and as Kadima described it, 'personal and non-political[23]'.

'Homeless Woman' and *'Seven Women'*, both composed in 2010, are settings of poems by Shin Shifra (1931-2012), the Israeli poetess, novelist and translator, an expert on Sumerian and Akkadian literature. The soulful *'Homeless Woman'* is scored for clarinet, 'ūd, cello and piano, whilst the wittier *'Seven Women'* combines the 'early music' sound of three recorders with the Middle-Eastern 'ūd which also joins in ironic style quotations including piquant Viennese waltzes. The idiom is thoroughly contemporary, engaging, and combines influences such as early music, atonality, and Arabian music, as displayed in several solo cadenzas in which the 'ūd becomes idiomatically Arabian using quarter-tones, shown in Ex.9, in contrast to other textures in which it fulfils a more Western textural/harmonic role.

'Seven Women' was composed for the occasion of Shifra winning an important prize (for her new monumental translation of the Gilgamesh story and other old Akkadian and Sumerian texts). The 'ūd player at the first performance was Nizar Francis from Haifa, who has been involved in various collaborative Arab-Jewish musical projects.

Several years later, it was performed again on the occasion of the launch of a new volume of Shifra's poetry, on that occasion with 'ūdist, Elias Waquila.

Example - 9 Hagar Kadima, *'Seven Women'* (2010) (cadenza). Published by the Israel Music Center. Reproduced by permission, © 2010, Hagar Kadima, Israel.

What is singular about Kadima's use of the 'ūd is the way it both adopts the Western scale whilst in combination with 'Western' instruments (as in the recorder trio of *'Seven Women'*), and also utilizes quarter-tones especially in solo improvisatory passages, often reserved for climactic structural points. That balance of association emerges in her quest for her own identity as a mediator of contrasting cultures, as she reflected *'The 'ūd has a long ethnic history which includes many musical traditions of playing and composing. When I write for the 'ūd, I cannot ignore its musical history and its natural musical environment. Yet it is me, with my own background and culture, who writes. And so writing for the 'ūd is for me a meeting point of worlds and cultures[23]'*.

III - Musical and Ideological Motivations

As Baron and Rubin have observed in relation to Wiesenberg, but which can be extended to all the works under discussion, the composers' motivations for using Middle-Eastern instruments is twofold: firstly musical – the appeal of the sound and combinations of sounds – and secondly ideological, a belief in the virtue of coexistence and dialogue[24].

Several of the composers have stressed the appeal of the sound colour of the 'ūd itself. For example in interview Menachem Wiesenberg emphasised how *'I love its noble sound. … As a composer I always look for new and stimulating sounds to incorporate in my music'*. For Hagar Kadima *'The 'ūd is an instrument of its own very special colours and "personality". I love the 'ūd's sound.'* Michael Wolpe links it to the sonorous tapestry of his formative youth, recalling how *'I love this instrument. It is a part of my childhood. I had many opportunities to listen to the 'ūd in all kinds of events[25].'*

All the composers shared a concern for the ideological aspects of the use of 'ūd and other Arabian instruments together with Western instruments, namely as a tool for peaceful dialogue and coexistence within the heterogeneous social fabric of contemporary Israel. As Shai Cohen observed of his *Collective Memory*, there is *'a full understanding that we (the ensemble) share the same culture in the Middle-East. So we are not*

Example 10 - Shai Cohen, *A Butterfly Flaps its Wings…* (2004), opening. Published by the Israel Music Center; reproduced by permission © 2004, Shai Cohen.

talking about exotics but about a way of living and surviving. We share the same land and memory[26].' Yet the allegories of coexistence within the group may also give rise to more subtle interrelationships, as in an earlier work by Cohen, in a highly abstract contemporary style, combining atonality and live electronics, *A Butterfly flaps its wings…* . For this work Cohen developed his own innovative graphic notation, in which the 'ūd is notated both precisely and with instructions to improvise.

The piece begins with a section throwing the 'ūd into relief as soloist, at first emerging through an eerie shimmery string sound, with idiomatic rising fifths and repeated notes, leading to ornamentation and a downward leap, later with a more intense outburst and return to the earlier gesture (Ex. 10).

In the next section it is the cello which comes to the fore with a lyrical melody, followed by loose imitation and duetting by the 'ūd, though higher (Ex. 11). The opening acts as a conclusion, as a kind of elusive framing refrain. Throughout, the electronics add feedback to both 'ūd and cello,

creating additional lines. And whilst there is a modernist atonality at work, at times the harmony expresses modality. Above all there is a dramatic tension in the resemblances between percussive strings and the 'ūd's plucked attack.

Cohen's interpretation of *A Butterfly flaps its wings…* highlights the paradoxical role of the live electronics in relation to both the cello and the 'ūd, which appear to refer to Jewish and Arabian elements respectively. At one level, the electronic element mediates by countering the clash of micro tones and Western tuning part of the discourse, as the composer observes '*Because of the live electronics, the way we perceive the tuning systems changes.*' Yet it affects both in a destructive way, as he explains: '*The Cello represents Jewish prayer. The electronics destroy the spirituality, and the left-over tries to blend unsuccessfully with the rich Arabian tradition (that is also destroyed by the electronics). So, the music does not leave us with a clear future, and happy end.*'

Shai Cohen's most recent work in this vein is *Elegy for Neverending Conflicts* for 'ūd, piano

Example - 11 Shai Cohen, *A Butterfly Flaps its Wings…* (2004), 'ūd and cello duet Published by the Israel Music Center; reproduced by permission © 2004, Shai Cohen.

and Electronics, composed in 2013. Here the sombre yet resolute piano chords form a steady framework for the *'ūd's* meditative musing, a decorative improvisation on a composed melodic line, yet the whole overlaced with an electronic strand that is occasionally inflected with sampled speech sounds[27]. Cohen's musical reflections on 21st century Israeli society echo the slightly earlier, overtly political works of contemporaries such as Michael Wolpe's *Songs of Memory* (1998), for voice accompanied by 'ūd, Arabian drums and Western string trio, which (like several other works by his contemporaries) protested against the 1st Lebanon War.

In general Wolpe's style is accessible, offering a reinterpretation of the popular nationalistic so-called East-Mediterranean style of the pioneer generations, as in his Concerto for 'ūd, titled *Remember Just the Brightness*, (2000), inspired by the bridging of East and West by Ben-Haim and the popular song composer Moshe Wilensky. Indeed there is a distinct neo-Mediterraneanism to Wolpe's postmodernism, shown for instance in the colourfully individual tonal-modal idiom of the 4th of 6 piano trios (to date), subtitled 'ūd trio, in which the cellist doubles as *ūdist*, in a type of Middle-Easternized European soundworld (Ex.12).

Example - 12 Michael Wolpe – *Piano Trio no. 4*, Opening. Reproduced by permission, © 2001, Michael Wolpe.

At the opposite end of the spectrum is the radical mixing of ethnic, classical, rock and traditional styles by the younger generation: one instance is Shai Cohen's most recent piece, *Shochenet Basade* (You've Dwelled Along the Plains), premiered in Israel in October 2012. The piece sets a *'Piyyut'* or liturgical poem by the medieval Spanish Hebrew poet Ibn Gibriol, of contemporary relevance. The instrumentation combines 'ūd with Jazz orchestra, and while its style uses jazz harmony, textures and syncopations, it is not a 'jazz composition'. It expresses Cohen's summing up of his own compositional identity, as he remarks *'I think there is something postmodern in my way of thinking … I do what fills me up with energy. And if it comes from jazz or contemporary music, or Arab music, or improvised or written, or from electronics, it does not matter: I do everything.'*

The composers represented here form just a part of a larger picture in which similar East-West fusions are being explored, a full discussion of which is not possible here, though one might mention composers such as Ronen Shapira, whose imaginatively radical *Taqsim-certo*, for Middle-Eastern tuned piano, Western piano and orchestra, is unique; Yehezkel Braun (b.1922) whose psalterion combines a Persian santur with the European piano trio and is based entirely on authentic Persian modes and melody; Yitzhak Yedid, whose jazz trio for Bass, piano and 'ūd (2005) mixes Christian, Muslim and Jewish traditions, with progressive ethnic jazz, and allusions to the Egyptian classical Arabic diva Umm Kulthum.

Conclusion

I have highlighted a little known, yet growing repertoire stemming from the last two decades, combining 'ūd and other Middle-Eastern instruments, with European instruments, often in multi-ethnic, multi-faith ensembles. From a historical perspective, one may consider the new works both as a continuation and more radical development of the orientalisms of the émigré generation of composers of the 1930s-50s, whether the 'Mediterranean' style of Paul Ben-Haim and Alexander Boskovich, or more modernist works by Josef Tal, Oedoen Partos and Mordecai Seter.

Certainly, the earlier Israeli music of the immigrant generation represents a more Eurocentric identity than that of the more recent group, whose oeuvre, with its exploratory innovations, both embodies and celebrates coexistence of a multiplicity of Western and non-Western identities. It is clear from the works discussed that composers of later generations, for whom Middle-Eastern soundscapes became a part of their musical habitat, engage in more radical compositional fusions. Composers such as Tsippi Fleischer, Menachem Wiesenberg, Michael Wolpe, Taiseer Elias, Yizhak Yedid, Hagar Kadima and Shai Cohen, explore compositional challenges such as instrumental and textural relationships, contrasts of timbres and tuning systems, and the balance of improvisational and fixed structures.

Just as the Eastern-Mediterranean style was just one part of a complex pluralism in the first years of the young nation state, so in recent years, the move towards what Jehoash Hirshberg has termed the 'realization of the Vision of the East' is still only a small part of the total picture of Israeli music. As Hirshberg notes of the trend, 'Even this change is still limited to a minority of Israeli composers and moreover, only to some, yet never all, of their compositions[28].' Indeed some of the composers discussed here and listed in Appendix 1, including Bardanashvili, Gil Shohat, Aviya Kopelman, Eitan Steinberg, and others, explore fascinating fusions that go beyond their immediate regional influences, responsive to the cross-cultural concerns of contemporary music in an international arena.

Nevertheless, the Middle-Eastern influenced works highlighted here might be usefully compared with similar fusions in the oeuvres of composers from different cultures such as, in the UK, Sir Peter Maxwell Davies, in his *Orkney Wedding with Sunrise* (1984) with its Highland piper or symphonies and tone poems like *Cross Lane Fair* (1994) for Northumbrian Pipes and Orchestra, all of which reflects his adopted Scottishness, or John Casken, who expands that approach by blending past and present in *Piper's Linn* for Northumbrian Pipes and electronic tape (1983-4). In *Red Earth* for 2 Digeridoos and orchestra (1987-8) the composer Michael Finissy looks beyond his own Britishness to Australian culture, whilst Ravi Shankar's *Sitar Concerto*, Tan-Dun's use of Chinese sound-worlds

with Western Symphony Orchestra, and similar fusions of Japanese traditional instruments (such as the mouth organ *sho*) by Takemitsu and the younger Hosokawa show similar interests.

Similarly, one might extend the present study to contribute to a particularly fascinating comparative study of various 'ūd fusions involving composers from other Middle-Eastern and North-African societies.

To what extent, one might ask, do the works contest the prevailing discourse of political conflict, and how far do they offer a more optimistic view of the Palestinian-Israeli relationship than might emerge from the cycles of conflict evident in news headlines? For some, it represents a move in the right direction, as Hagar Kadima observes, with the *caveat* of patience in the quest: *'Even when Arab and Jewish musicians collaborate and do something together – this is in itself already something. Yet if it does something – it does one millimetre at a time, it's not more than one millimetre[29]!'* For some, the music represents a utopian vision, as Shai Cohen has observed: *'This is the idea. To bring to life something that's maybe fantasy; to distort the reality and to bring something new, something not bad, something with beauty[30].'* For others, the reality of the performativity of the mixed ensembles is itself a step towards coexistence. As Benjamin Brinner observed in the conclusion to his study Playing across a Divide, the ensembles *'provide a model of how one might live together not only in peace, but in mutually beneficial harmony[31]'.* That attitude is echoed in an interview about the Arab-Jewish Youth Orchestra, in which its conductor Taiseer Elias remarked: *'when we work together and play together you cannot hate each other. And we believe really that music can tear down walls of hatred and misunderstanding and problems[32]'.*

I would suggest that as well as offering a guiding vision, the works discussed represent significant stages in the process of both cultural dialogue and peaceful coexistence. Moreover in that the music represents an encounter between identities and cultures, it also underlines how the ever varying balance of regional and international influences remains a potent topic, relevant as much to the universal concerns of postmodernism as to current aesthetic-political tendencies in Israel and the Middle-East.

Notes

1 The present article is based on a paper for the conference *'The Oud from its Sumerian Origins to Modern Times'*, presented by ICONEA, a research Group of the Institute of Musical Research, University of London, (Now at the Faculty of Oriental, Studies at the University of Oxford) 1-3 December 2011 at Senate House, London, organised by Richard Dumbrill and Irving Finkel, and an adaptation presented at the International Musicological Society's 19th Congress in Rome 1-7 July 2012, Musics, Cultures, Identities.

2 Hirshberg, J., *'The Vision of the East and the Heritage of the West'* (2007-8).

3 See Hirshberg, J., 2002, pp.11-22 and Bohlman, 2008, p.47

4 One intriguing exception by Zvi Nagan is given in the Work List handout. Nagan (Neugarten), Zvi * (Herbert, b. 1912, Buer, Westfalen, Germany, in Israel since 1937, d.1986, Tel-Aviv) - composer, musicologist, teacher.

5 For a fuller discussion see Hirshberg, J., Paul Ben-Haim, 2010, pp. 161-5.

6 The composers include Tzvi Avni, Ben Zion Orgad, Noam Sherif and Yitzhak Sadai, Ami Maayani, and later immigrants of the late 60s and early 70s, Mark Kopytman, Sergiu Natra, and Leon Schidlowsky.

7 Fleischer, R., 1997, p. 42

8 Quoted from her website www.aviyakopelman.com

9 Wiesenberg, M., email interview with the author, 24.11.11

10 Cohen, S., email interview with the author, 22.11.11

11 Recent studies which discuss the shift in music of the East in Classical, World and Pop musics include Regev and Seroussi (2004), Brinner (2009), Baron and Rubin (2008), Hirshberg (2002). See Bibliography.

12 Galit Saada-Ophir, 2006.

13 Marks, E., 2008.

14 See Brinner, 2009. Other groups include for instance the multi-cultural Andalusian Orchestra (formed 1994), the Nazareth Arab Orchestra (formed 1990), the East-West Ensemble, Ziryab Trio, and projects by Schlomo Gronich.

15 Wiesenberg, M., email interview with the author, as note 9

16 Arnheim, Y., phone interview with the author, June 2012

17 Cohen, S., email interview with the author, as note 10

18 Wiesenberg described the reception of his Concertino for 'Ud Piano and String Orchestra of 1994 at a Swiss performance in 2011 by Taiseer Elias and the Jerusalem Camerata conducted by Avner Biron, in which *'…the audience reacted so enthusiastically that I was quite overwhelmed.'*

19 The texts are four poems by Lebanese and Syrian poets of the 1960s. Such was the appeal of the work that the composer recalled receiving, in 1987, in an interview with the author, *'an excited letter from a young man from Gaza who heard Girl Butterfly Girl being broadcast on the Arabic channel of Israeli radio and was fascinated with it'.*

20 Miller, M., 'Dreams of Co-existence: Malcolm Miller in Conversation with Tsippi Fleischer', in *Jewish Renaissance*, January 2011. The article Includes discussion of Fleischer's opera *Oasis* which envisions Arabs and Jews living peacefully together.

21 Iman M., went to the USA in 1998 and thence to Alberta Canada where she is married to an ethnomusicologist.

22 Moderna appears on CD in Tsippi Fleicher Oasis, Vienna Modern Masters 4007

23 Kadima, Hagar., email interview with the author, 29.11.11

24 Kadima, H: email interview with the author, as note 23

25 Baron and Rubin, 2006, pp 347-52 26 Interviews with the author as in notes 9, 34

27 Interview with the author as in note 10

28 A recording of this work and many of Shai Cohen's works appears on youtube via his website http://mashav.com/sha/

29 Hirshberg, J., 2007-8, p.115

30 Kadima, H., interview with the author, 29.3.12

31 Cohen, S., interview with the author, 29.3.12

32 Brinner, B., 2009, p.326

33 Transcribed from a Youtube interview on the Culture Channel, on the occasion of the 10th anniversary of the Arab-Jewish Youth Orchestra: URL - http://www.youtube.com/watch?v=ySt9OmHKV_s

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Appendix 1:

Repertoire featuring 'ūd and Western instruments by Israeli Composers, listed in Chronological Order:

Zvi Nagan, (1912-1986): Intermezzo (1965) for flute, 'Ud, *qanun*, xylophone (or vibraphone) and percussion.

Tsippi Fleischer, (b. 1946): Girl Butterfly, Girl (1977), soprano, 'ūd, violin (texts: Syrian/Lebanese poets); Symphony no.4 (2000), Orchestra and mixed middle-eastern ensemble; Moderna op.70 (2010), for, soprano/ mezzo, 'ūd, cello, piano (text: Imam Mersal)

Josef Bardanashvili (b.1948): Scene (1996), for flute (alto and piccolo), 'ūd/hpd and percussion

Menachem Wiesenberg (b.1950) = 'ūd works for **Taiseer Elias:** *Encounters* I (1992) for 'ūd and Piano; Trio (1996) for 'ūd, cello and piano; Concertino (1994) for 'ūd, piano and string orchestra; Concerto (1999) for 'ūd and orchestra; Encounters III (1995) for oboe, clarinet, bassoon, 'ūd, piano, violin, viola, cello and double bass.

Hagar Kadima (b.1957): *Homeless Woman* (2010) for Soprano, Clarinet in Bb, 'ūd, cello and piano (text: Shin Shifra); *Once* (2004) for mezzo soprano, Arabian violin, 'ūd, 2 violins and cello (text: Kadima); *Seven Women*, for mezzo soprano, 3 alto recorders, 'ūd (text: Shin Shifra); *'Stop'* – for mezzo soprano, recorder and 'ūd (S. Shifra) (2013); *'A Woman Is Not…'* - for mezzo soprano, 2 recorders and 'ūd (S. Shifra) (2013)

Michael Wolpe (b.1960) = 'ūd works for **Taiseer Elias:** *Songs of Memory* (1998), 'ūd and ensemble; Concerto for 'ūd (2000-6) *'Remember Just the Brightness'*; 'ūd Trio No.4 (2004); Quartet for 'ūd, mandolin, harpsichord and guitar (2005).

Ronen Shapira (b. 1966); *Taximcerto* (2011) for Middle-Eastern piano, piano and orchestra (including traditional Arabic instruments such as 'ūd); various 'ūd pieces for **Wisam Gibran.**

Wisam Gibran (b.1970); *Out of Aida* for ensemble Sheshbesh (Middle-Eastern and Western instruments).

Shai Cohen (b.1971) = 'ūd works for **Wisam Gibran;** *A Butterfly flaps its wings...* string trio, Arabian 'ūd, live electronics; *Collective Memory* (2004), for ney flute, Arabian violin, 'ūd, arabian percussion, flute, violin and bass (for Sheshbesh, the Arab-Israeli Keynote Ensemble of the Israel Philharmonic Orchestra); *Shochenet BaSadeh* (You've Dwelled Along the Plains) for Ethnic singer, chorus, 'ūd, jazz ensemble, piano and percussion (Arabian, Latin and kit) (text: Ibn Gibriol, Medieval Spain); *Elegy for neverending conflicts* (2013) for 'ūd, piano and electronics.

Gil Shohat (b.1973); *Hymn For Happiness* (2001) for soprano, children's choir, orchestra and ensemble of traditional Arabian instruments (Violin, *ney*, 'ūd and darabuka); dedicated to the Happiness of All Children; (texts in Hebrew and Arabic, A.Mishol and H.Abu-Hana).

Aviya Kopelman (b.1978); *Silence in the Heart*, Voice, 'ūd, zarb, piano and string quartet 12'30" (text: Nathan Alterman).

Appendix 2

Biographies of Composers in the Repertoire List

Shai Cohen was born in Haifa in 1968, and is a teacher, composer and jazz performer on flute and saxophone, a recipient of the prestigious Israeli Prime Minister Award for Composers (2011). Shai composes symphonic music, chamber music, electronic music, and music for solo instruments. He is an active member at the ICL (Israel Composers League) and in ACUM (Authors, Composers & Publishers Association). In 2003 he was appointed Lecturer at the Department of Music in Bar-Ilan University and in 2010 won the ACUM Prize for his work *'Echoes of Eternity'*-Fantasia for violin solo and orchestra. He began to study jazz performance and composition at the Rubin Academy for Music and Dance, Jerusalem in 1992. In 2007 he received his PhD in composition at Bar-Ilan University under the supervision of Professor Gideon Lewensohn and Professor Betty Olivero.

Taiseer Elias, 'ūd virtuoso, conductor and composer, considered one of the leading figures in Arabian music in Israel, is a Professor at Bar Ilan University and is Chairman of the Eastern Dept. of the Jerusalem Academy of Music and Dance. Elias is a founder member of Bustan Abraham and recently founded the Arab-Jewish Youth Orchestra which has toured and recorded to great acclaim.

Tsippi Fleischer, b. 1946, has devoted much of her career to composing with Arabian and Middle-Eastern sources. She was born in Haifa to Polish émigré parents whose families had perished in the Holocaust. From the age of eight, Fleischer learned Arabic at the Reali school, one of the first to teach Arabic, and nurtured her love of Semitic Linguistics with a research degree, alongside a music degree at the Rubin Academy, Jerusalem, studying with Noam Sheriff, Yizhak Sadai and Tzvi Avni. Her first major work, in 1976, was an innovative symphonic poem inspired by a Lebanese poet, Shauki Abi-Shakra, *Girl Limonade*, widely performed and even choreographed as a ballet. Fleischer researched its Arabic styles during field work with musicians in the Druze village Dalyat al-Carmel. Fleischer has been involved in education, especially with Arab musicians, at the Levinsky College, Tel Aviv, where she has taught for 35 years, and in Haifa, where many of her students have become teachers in their communities. She has composed in many genres including children's operas.

Wisam Gibran was born in Nazareth, Israel in 1970. His father taught him violin from the age of four, and he subsequently studied violin and piano at Haifa Conservatory. At the age of sixteen he discovered the 'ūd. Gibran studied at the Tchaikovsky Conservatory in Moscow, and the 'Hanns Eisler' School of Music, Berlin. He is a prolific composer, and as well as solo 'ūd music, concertos and vocal and chamber works, he has also written music for film, theatre and opera. His works have been performed at festivals in Europe, the USA, Canada, Israel and Jordan, and he has performed widely as a soloist on 'ūd and violin. Recent collaborations include the Sheshbesh Ensemble (IPO), The Arab-Jewish Youth Orchestra , an acoustic duo with Israeli classical guitarist Yuval Avital, as well as a jazz quartet with flute and saxophone, bass and percussion. www.'Ud. eclipse.co.uk/gibran.html

Hagar Kadima is a composer and artist. Born in Israel in 1957, Kadima was a composition student of Professor Abel Ehrlich at the Rubin Academy of Music, Tel Aviv University, receiving her M.A. and Ph.D. in composition at the University of California at Santa Barbara, studying with Professor Edward Applebaum, Professor Emma Lou Diemer, and Professor Peter R. Fricker. Dr. Kadima studied at the 1985 Aspen summer school with Luciano Berio, Earl Brown, Joseph Druckman and Bernard Rands. Her awards include the 1984 annual ACUM Prize, the Rostrum (European Radio) (1987) and the Prime Minister Composers Prize (2003). In addition, she has represented Israel at the Aspekte Salzburg Festival (1990), ISCM festival, Warsaw (1992), and Ireland (1995), Germany (2006) and Italy (2006). Her chamber and orchestral music has been performed and broadcasted worldwide, published by the Israeli Institute of Music and the Israeli Music Center. Her piece *'Not a Lament'*, in memory of the late Prime-Minister Yitzhak Rabin, was premiered in Germany in 1996. Dr. Kadima is presently on the music faculty at Lewinsky College, Tel Aviv, and founded and chaired the Israel Women Composers' Forum in the years 2000-2004.

Aviya Kopelman was born in Moscow in 1978 and immigrated to Israel in 1987. She began taking piano lessons on her own initiative at the age of 12. She graduated from the Rubin Music Academy in Jerusalem, where she studied composition with Tzvi Avni. Commissions have included a string quartet for the 'Sounds in the Desert Festival' and an obligatory work for the 12th Arthur Rubinstein International Piano Master Competition. Her works have since been performed regularly in Israel and abroad by leading orchestras and ensembles. She has worked with and been influenced by composers such as Andre Hajdu, Oded Zehavi, and Ronen Shapira. Kopelman teaches composition at the Hed College for Music in Tel Aviv and at the Rimon School of Jazz and Contemporary Music.

Ronen Shapira, composer, pianist, 'ūd player, and singer, received the Israel Prime Minister Award in 2005 for his original music and ideas on cross cultural synthesis. He founded the Jewish-Arab Orchestra, and has forged an unusual field in composing for the non-equal piano, with Middle-Eastern tuning, including quarter tones. Ronen Shapira was a student of composers Andre Hajdu and William Bolcom and received his PhD in composition at Northwestern University, and MA in Jazz from the University of Michigan. He performs widely and has made several recordings with leading rock musicians. He currently teaches at Levinsky College, Tel-Aviv.

Menachem Wiesenberg (b.1950) is Dean of Conducting and Composing at the Jerusalem Academy, on a Faculty member of the Jerusalem Music Centre. He is recipient of major awards including the 1999 Prime Minister's Prize and the 2010 ACUM prize with a prolific output covering serious concert music as well as jazz and light music. He learned music from his father, a performer in a well-known Russian band. During WWII who made his way via Siberia in 1942 to British Mandate Palestine, settling on a Kibbutz. Wiesenberg studied arranging whilst in the army and at Mannes College in New York during which time he studied analysis with the Schenker pupil Ernst Oster. Outstanding amongst his achievements in Israel are his jazz trio and song arrangements for Chava Alberstein and Mira Zakai (for her album Shirei Eretz, Songs of the Land), his collaborations with Taiseer Elias, and his numerous instrumental works. His website is www.mwm.co.il

Michael Wolpe (b.1960) is one of Israel's most prolific and energetic composers and educators. He studied with Tzvi Avni, then pursued an M Phil. at Cambridge University with Alexander Goehr, where he encountered Michael Tippett and Robert Simpson who inspired his PhD at the Hebrew University, about the British Symphony in the second half of the 20th century. Currently he is Head of the Composition and Conducting at the Jerusalem Academy of Music, and Artistic Director of major Festivals such as the October Music Days, and Sounds of the Desert Festival in Kibbutz Sde Boker (in the Negev) where he lives, which he founded in 1997.

Yitzhak Yedid (b.1971), of Syrian-Jewish background, is a pianist-composer whose style straddles the worlds of jazz, world music and contemporary classical. He studied in Israel and at the New England Conservatory Boston, and currently resides in Australia. Even in his Piano trio entitled *Nine Images* (2006) which is full of innovative textures, there is an intriguing instruction in the final 'image' 'a torrent of emotions' to produce 'glissandos of approximately quarter notes' which are to 'imitate the sound of an Arabian folk music player'.

EXTANT LUTES FROM THE NEW KINGDOM AND THE COPTIC PERIOD OF ANCIENT EGYPT

Ricardo Eichmann

1.Introduction

The musical heritage of Ancient Egypt consists of several more or less preserved musical instruments, as well as iconographic representations and epigraphic sources relevant to music[1]. This information is important for the reconstruction of ancient musical instruments and their related musicology. Therefore, lutes are of particular interest since some of them have fret marks which delineate single musical intervals and therefore, musical scales.

In ancient Egypt only bowl-lutes, so called spike-bowl lutes and bowl-lutes with necks, were known[2]:

1. Spike-bowl lutes have a neck made of a wooden stick which is inserted through the sound-box. It consists of a natural (*e.g.,* a tortoise shell) or a carved wooden bowl, covered with a soundboard made from animal raw-hide.

2. Bowl-lutes with necks, on the contrary, were monoxylous which means that their neck and bowl-shaped resonator, were both made of the same block of wood.

There is no doubt that lutes were brought to Egypt at the beginning of the New Kingdom or shortly before, in the late17[th], early 16th centuries B.C., by Western-Asiatic musicians[3]. According to iconographic and vague cuneiform evidence, the lute appeared in Mesopotamia, at the latest, in the Akkadian period[4] (late 3rd millennium B.C.) and was apparently unknown in Southern Mesopotamia at the end of the 3rd millennium[5]. Unfortunately, there is not a single fragment of a lute known, so far, from ancient Mesopotamia. Thus, the study of musical instruments from Egyptian sources may lead to the understanding of some of the lost Near-Eastern musical traditions.

Spike-bowl lutes were in continuous usage in the Near-East until the Hellenistic period[6]. Nowadays, as far as we know, the more advanced 'necked-lutes' were built – according to the iconographic evidence – at the latest during the Hellenistic period[7]. Both types are important for the reconstruction of ancient musical intervals.

2. Organology

There are eleven extant instruments, from Ancient Egypt, in various states of archaeological preservation. They are currently hosted in museum collections in Germany (5), Egypt (4), France (1) and in the United States[8] (1).

2.1 Spike-bowl lutes

There are four 'spike-bowl lutes' dating from the Pharaonic period. They are of two different types of construction. The first type is represented by two instruments dated to the 18th Dynasty[9] (second half of 16th-14th century B.C.; Fig.1). They were excavated from two adult male graves of musicians at Deir el-Medina and Sheikh Abd el-Qurnah (Harmosis lute). The lutes are of different sizes and have in common a wooden stick serving as neck and a sound-box made of a bowl-shaped single piece of wood or a tortoise shell[10]. Both shell or wooden sound-box were covered with a thick animal raw-hide painted red. Six small perforations in each soundboard served as sound-holes. The stick was inserted through slits and ran above and below the soundboard. Two or three strings were tied at the upper end by means of 'cord-rolls', fitted around the neck, frequently with long decorative tassels.[11] Strings were found preserved only on the larger Harmosis lute. Interestingly, the smaller instrument had, at some point, been fitted with frets tied around the neck, from which we might assume that they delineated intervals.

Two instruments of the second type of spike-bowl lute, dated to the 8th century B.C., were

Fig. 1. Extant spike lutes from tombs of male adult persons of the 18th Dyn. (2nd half 16th – 14th century B.C.); below: Lute from Deir el Medina with imprints of frets; above: Lute from Sheikh Abd el-Qurnah, found beside the sarcophagus of the singer Harmosis; with this instrument strings were preserved *in situ*; photos by the author.

found in the grave of a young female near the site of Abusir el-Meleq[12] (Fig. 2). They also had a wooden stick used for their neck and a had a boat-shaped sound-box made of a single piece of wood. Small bars or boards reinforced the boat-shaped bowl. The strings, of which none survived must have been tied at the upper end as aforementioned. At the lower end they were tied through small holes. An animal raw-hide would have been used as soundboard. It covered the whole of the opening as well as the back of the soundbox. There are markings at the back of the wooden bowl showing how the hide was attached. Such traces can also be observed on a single boat-shaped bowl of unknown provenance on permanent display at the Louvre Museum[13].

The neck runs mainly below the membrane, unlike in other cases where it passed above and below the hide. Only its lower end, where the strings were attached is visible. It is unknown if the Abusir el Meleq lutes would ever had sound-holes. As with the previous instrument type, the smaller instrument had been fitted with frets tied around the neck.

2.2 Necked-lutes

Extant monoxylous instruments are known from the Coptic period. Their construction might go back to the Hellenistic or the Roman periods from which only iconographic examples have survived. Their wooden soundboards were two to three millimetres thick and made from coniferous wood. Seven extant instruments are known from different sites[14]. (Fig. 3) Three were excavated by archaeologists in cemeteries at Antinoé, Saqqara

Fig. 2 a.b. Extant spike lutes from a tomb of a young female person, Egyptian Museum Berlin (8th century B.C.). Both resonators were once covered entirely by an animal skin, which is indicated by the patina and tool marks: a. Small lute with imprints of frets; b. Big lute with (unintentionally) curved handle; photos by the author.
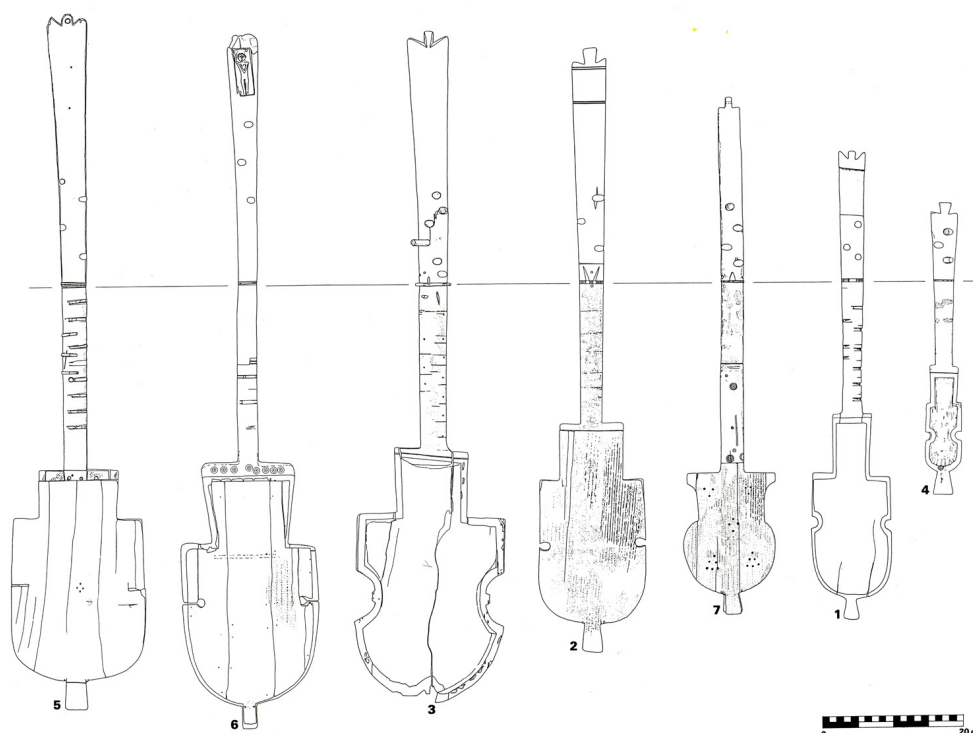
Fig. 3. Extant lutes from Late Antiquity and the Early Islamic Period (Coptic lutes; 5th – 9th century A.D.): 1 Antinoé (Musée des Beaux Arts, Grenoble); 2 Saqqara (Coptic Museum, Cairo); 3 Qarara (Collection of the Institute of Egyptology, Ruprecht-Karls-University, Heidelberg); 4 University of Göttingen, Department of Musicology, Collection of Musical Instruments; 5-6 Munich, Münchner Stadtmuseum, Collection of Musical Instruments; 7 Metropolitan Museum New York; after Eichmann 1994, pl. 23.

and Qarara. (Figs. 3, 1-3) The provenance of four instruments hosted in public museums in Germany and New York (Figs. 3, 4-7) is unknown. They can all be dated, according to archaeological evidence, to the 5th – 9th century A.D. It is not yet clear what kind of music was played on Coptic lutes[15].

The fundamental features of these instruments are a neck with flat front and curved back, and a sound-box with a peg at its lower end to tie the strings. The instruments represent two types which are characterized by a spade-like outlined sound-box with lateral carvings (Type 1, Figs. 3, 1-6) and by a vase-like outlined sound-box (Type 2, Fig. 3, 7). The strings, of which none remains, were fastened at the upper end with three tuning pegs which were inserted, two on the right, and one on the left side. So, although none has survived, it can be safely assumed that these lutes we fitted with three strings. A fourth peg-hole seen on a lute of each type can be assumed as later additions, according to patina and facture. Similar lutes would

have been well known at the same time all around the Eastern-Mediterranean in Byzantine and early Islamic (Ummayyad) periods[16].

All Coptic lutes of the first type were fitted with frets which were either glued on the surface of the fret-board or set into groves but were not tied round the neck. The left and right sides of the fret-board had two different fret patterns. The instrument of the second type was fitted with tied full-frets. (Fig. 4)[17]

2.3 Organological features and problems

The two spike-bowl lutes dating from the New Kingdom excavated at Deir el Medina and Sheikh Abd el-Qurna are the best preserved of all Egyptian ones. Their fundamental features are intact. With other extant instruments some important details are lacking. For instance, the bridges of the spike-bowl lutes from Abusir el Meleq and all Coptic lutes are all missing. Thus, their manufacture will be a matter for further discussions and
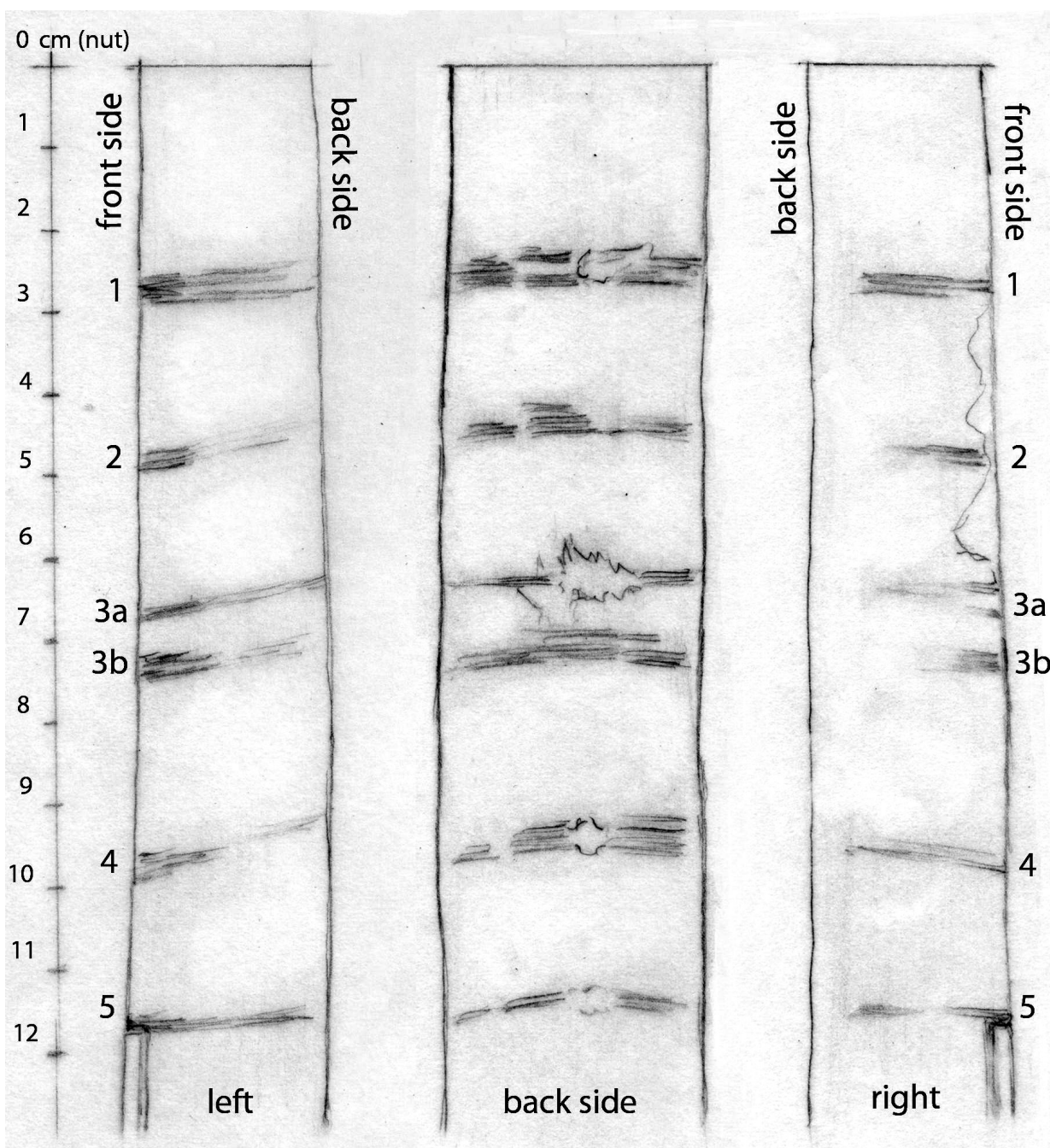
Fig. 4. Fret imprints (1-5) on Coptic lute no. 7 (as preserved on the back side of the handle); drawings and measurements by the author.

hypotheses. The same applies for the positions of the bridges for which reconstructions have been proposed. These reconstructions are based on the analysis of fret patterns[18]. While the Coptic lute tuning is quite straight-forward (tuning pegs), the tuning methods for spike bowl lutes are still only partially understood. Among the published data, there is only one single iconographic representation of a female musician probably tuning her instrument[19]. As lutes were most certainly played in ensembles[20], fine tuning must have been an important issue. Today, we are able to fix the strings on reconstructed spike-lutes (Fig. 5) by means of cord rolls. The tuning of a string means increasing or reducing its tension moving up or down the cord-rolls with varying pressure. Should the cord-rolls lose their grip, they must be wound up again.
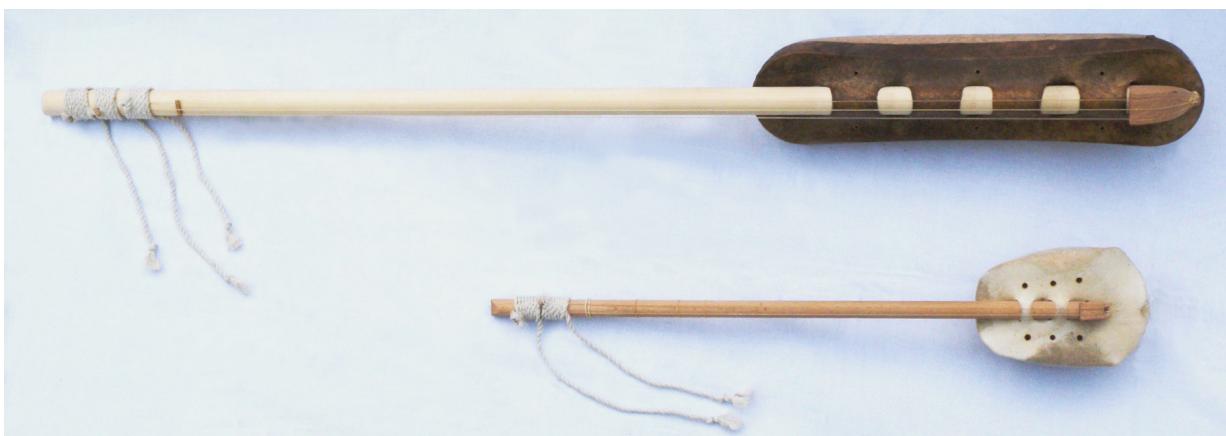
Fig. 5. Reconstructions of spike lutes from Deir el-Medina (below) and Sheikh Abd el-Qurnah, above (Harmosis lute); based on the documentation of the author, made by Susanna Schulz (Berlin); photo by I. Wagner (DAI Berlin); and supported by TOPOI Cluster of Excellence (Berlin).

Another problem encountered in the reconstruction of ancient Egyptian lutes is the lack of information about the wood essences used. Most instruments have not yet been studied by botanists. Thus, we have to rely on types of wood that were in common usage. Different types of wood were used in Egypt for the manufacture of artefacts: sycamore and tamarisk, which were locally available, were used, for instance, for furniture, boats, coffins and statues[21]. Local acacia was also used for other types of objects. According to the most recent botanical analysis of musical instruments, all these species were used to construct a bow harp from Dra Abu al-Naga[22]. Many other types, such as ebony and cedar, were imported from the Sudan and the Levant.

Botanical analysis has been carried out for the Antinoé Coptic lute. It was made of *persea* (a locally grown laurel family essence) for its bowl; *capparis* (or caper bush) was used for its neck, and boxwood for its tuning-pegs[23]. *Capparis* was also used for the nut.

During the Roman period almost all kinds of wood from Europe, the Levant and India were available in Egypt. Wood trading, including pine, elm, cork-oak and teak[24] were known to have been carried out at the harbour of Berenike, on the Red Sea. The wood used to construct lutes appears to have been selected carefully. The wooden shells of spike bowl lutes were made from the heartwood of trunks, while their handles were taken from sapwood-boards.

However, in one instance a young tree or a branch had been used and as a result it curved significantly rendering the instrument unplayable.

Coptic lutes were regularly made from sapwood boards[25]. Almost all instruments have shrinkage cracks, which accounts for their destruction. On Coptic lutes, particularly, the part between neck and sound-box was prone to fracture.

An essential element of a musical instrument construction is its design. It is well known that this can be a very delicate and controversial field of research, especially when trying to explain formal features of an artefact by means of ratio measurement. This may lead to too many assumptions. From the study of all extant spike lutes and Coptic lutes it becomes clear, however, that the design is roughly based on simple ratios which can easily be memorized: 1:2, 2:3, 3:4, etc.[26]

There was no standard layout, with the exception of a few features. With Coptic lutes, firstly, the location of the octave was always placed at the junction of the neck with the soundbox[27]. Secondly, the emplacement of the bridge was marked by lateral concave carvings on the neck, at least in the instrument's primary state of construction.

3. Music theory

3.1 Speaking lengths of strings

The most important quality for an instrument, to the ears of a musician, is mainly its sound and playing comfort. These features seem to have differed with all extant spike-lutes, as can be noted from string lengths, which all vary. The speaking-lengths of strings on preserved spike-lutes are 48.8 cm, 60 to 65 cm, 74.8 cm and 97.0 cm. They may

have have been multiples or fractions of cubits around 48.5 to 50 cm[28] and may have corresponded to the player's voice and physiological features as well as to the intended sounds and pitches (low–high). According to iconographic representations, early lutes were most commonly fitted with two or three strings.

Although sizes of Coptic lutes differ considerably (Fig. 3), their string lengths seem to have been standardized originally to about 38 – 40 cm. In standard construction, Coptic lutes had three strings, with two probably being tuned *unisono*. Thus, only two-string units were available, one (double) treble unit for melody playing and another single-string unit tuned at a lower pitch that may have served as a bordun or enlarged the scale of the double-string unit downward (in order to complete the octave). According to an analysis of fret patterns and ethnographic analogies, the strings were most probably tuned at an interval of a fourth from each other[29].

The strings of spike-lutes were arranged in two or three (single) string pitches. This interpretation is supported by the thickness of preserved strings made of twisted gut which were found *in situ* on the Harmosis lute (Fig. 6). The diameters are 1.02 – 1.07 mm (left, lower string), 0.92 – 0.95 mm, (middle string) and 0.85 – 0.86 mm (right, treble string)[30]. Whether the middle and treble strings were tuned *unisono* remains conjectural.

3.2 Intervals: Coptic lutes

Considering the number and distance of frets or fret marks which are different on each side of the fret-boards, heptatonic scales could have been played on Coptic lutes. Four instruments (Figs. 3, 1-3, 5) are based on a pentatonic scale.[31] On the Antinoé lute dating from 5th/6th century A.D., for example, we have the following series of intervals: 288/210/193/163+165[328]/182 cents and 210/193/163+165[328]/182/157+173[330] cents[32]. The thirds in the latter scale, which can be played on the treble-string unit, are divided into two 3/4 tones of around 157-167 cents. There are two types of whole tones: 210 and 176-187 cents.

As the frets were not movable but set in a specific place, music could be performed only in

Fig. 6. Close up view of preserved strings and cord rolls of the lute from Sheikh Abd el-Qurnah (Harmosis lute, 18th Dyn.); photo by the author.

specific modes. On the Antinoé lute, the scales of the treble (193/163/165/182/157/173 cents) are reminiscent of the Persian-Arabian *maqam rast*, a very common scale in Near-Eastern music, or of the *diatonon homalon*, described by the native Egyptian Klaudios Ptolemaios[33] (2nd century A.D.). Both scales are based on a tetrachord, divided into one whole tone and two three-quarter tones[34]. Adding a ¾ tone and a whole tone allows for intervals of 339, 347 and 358 cents to be played ('neutral thirds'). These are neither minor nor major thirds.

According to iconographic sources, instruments similar to Coptic lutes seem to have been widely known during the Byzantine and Ummayyad periods (5th - 8th century A.D.), where they appear, among other places, on floor mosaics and wall paintings[35].(Fig. 7) It would be tempting to assume that the musical scales performed on Coptic lutes would have been similar, but the representations do not allow to take accurate measurements and compare them with the Coptic fretting.

Little is known yet about the methods used for defining exact fret positions. They may have been adjusted according to demand and, or, to theoretical dictates. Lateral incisions on the sides of two lutes can be taken as evidence that it was copied from a model[36] (Fig. 3, no. 3 and no. 6). On the Antinoé, the first interval of the treble string, which is the distance between the nut and 1st fret, was about 1/10 (38.3/40.0 mm) of the speaking length (379.2 mm) of the structure[37]. The second fret, where the neutral third could have been played, indicates roughly the middle of the distance between the first and third fret (30.4/28.0 mm). The third and the fifth frets,

Fig. 7. Representation from Quseir el-Amra (Jordan; early 8th century A.D.); photo by the author.

however, give exactly half of the distances between the second and fourth frets (28.0/28.0 mm) and the fourth and sixth frets[38] (21.9/21.9 mm). The equal division of lengths may be understood as a non-musical approximation of equal musical intervals (?).

Other lutes are essentially similar, with interval sizes varying slightly on each. Evidently there was no exact standard to which all lutes corresponded. This observation assumes that string divisions were probably made accordingly to personal practice and individual knowledge or talent. On the whole, I would suggest that lutes probably were not built to the same theoretical standard[39].

3.3 Origin of the 'neutral third': Spike lutes

From the study of Coptic lutes it may be possible to trace back some elements of Arabian music of Late Antiquity. A much older context during the Pharaonic period, however, cannot be excluded. Evidence of the 'neutral third' comes from the New Kingdom. (16th – 14th century B.C.) One of two existing spike-lutes (from Deir el-Medina) has marks of three tied frets[40]. (Fig.8) Unfortunately, the surface of the neck of the

instrument was considerably damaged in modern times. Particularly the middle part of the neck, where it was broken, in antiquity. It would have been restored after excavation and finished with sandpaper, probably by someone unfamiliar with modern archaeological conservation methods, who glued the broken parts together and sanded the surface.

Thus, we are left with only one string marking on the lower part of the neck (near the sound-box) and two marks on the upper part. Based on my reconstruction[41], the upper mark indicates the position of a nut (Fig. 5) which formed the upper end of the speaking length. The lower end of the string is given with a prism of wood which would have been its bridge.

In view of this reconstructed string length (48.8 cm), the second accurate fret position (Fig.8) represents the point where an interval of 357 cents could have been played (Fig. 8b., 9.10 cm). In addition, one centimetre up the 357 cents point, other traces with clearly defined delimitations are visible (Fig. 8b., 8.15 cm). They could represent the emplacement of a minor harmonic third (315 cents). This observation suggests that musicians may have changed fret positions in order to switch between different modes when it was required[42].

Between this point and the nut ('0') other makings are visible. They might indicate that this interval had been divided into two parts, probably a whole tone of around 210-220 cents and a three-quarter tone of 140-150 cents. These results partly correspond to an analysis of flutes carried out by Muhammed Effat, Fathi Saleh and Robert Gribbs[43]. They found out that 'Arabian scales' were already played in Pharaonic Egypt alongside the diatonic scale[44]. Taking into consideration that lutes and flutes were played together in antiquity[45], it is not surprising to find 'Arabian' intervals on both instruments.
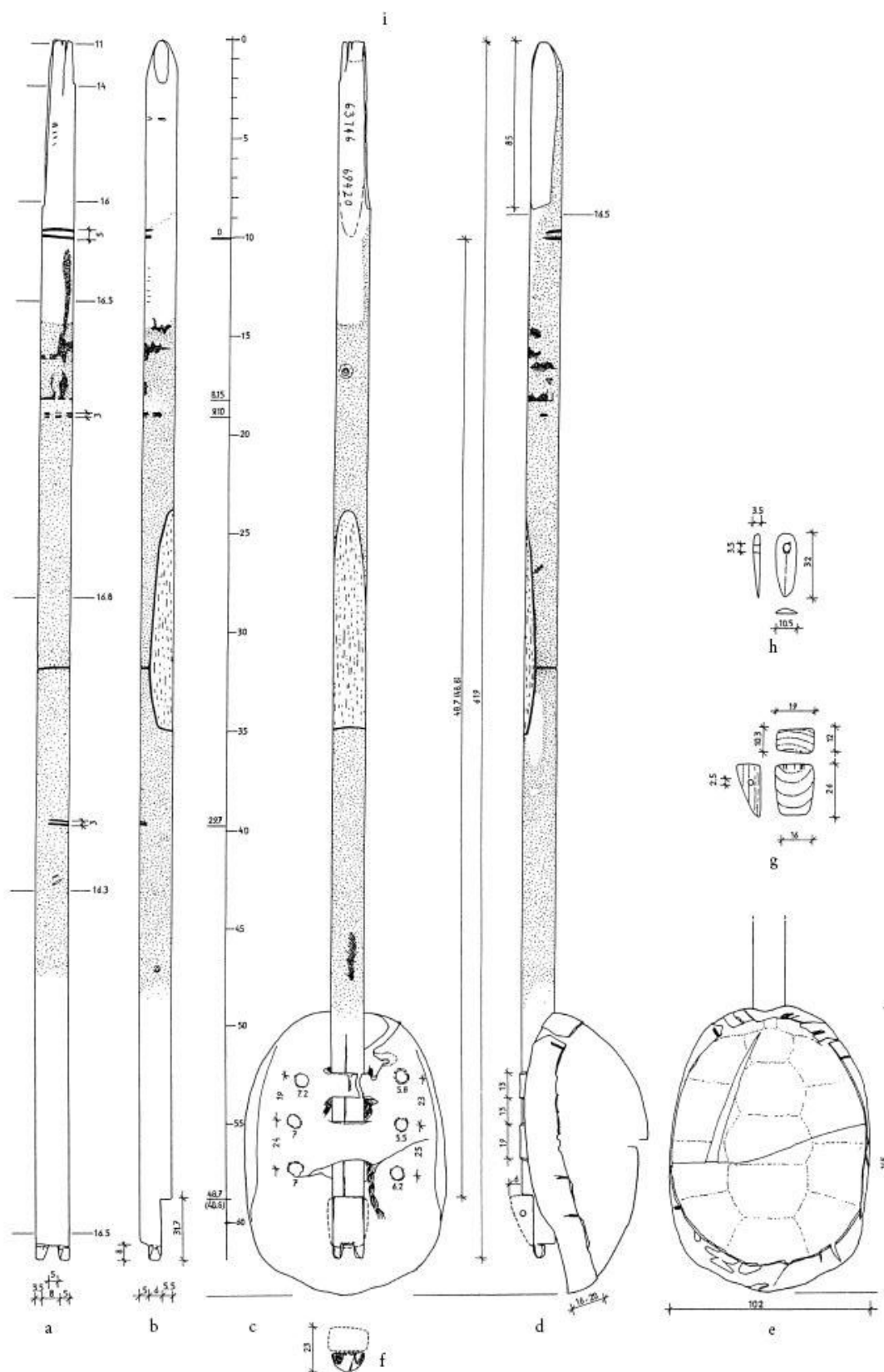
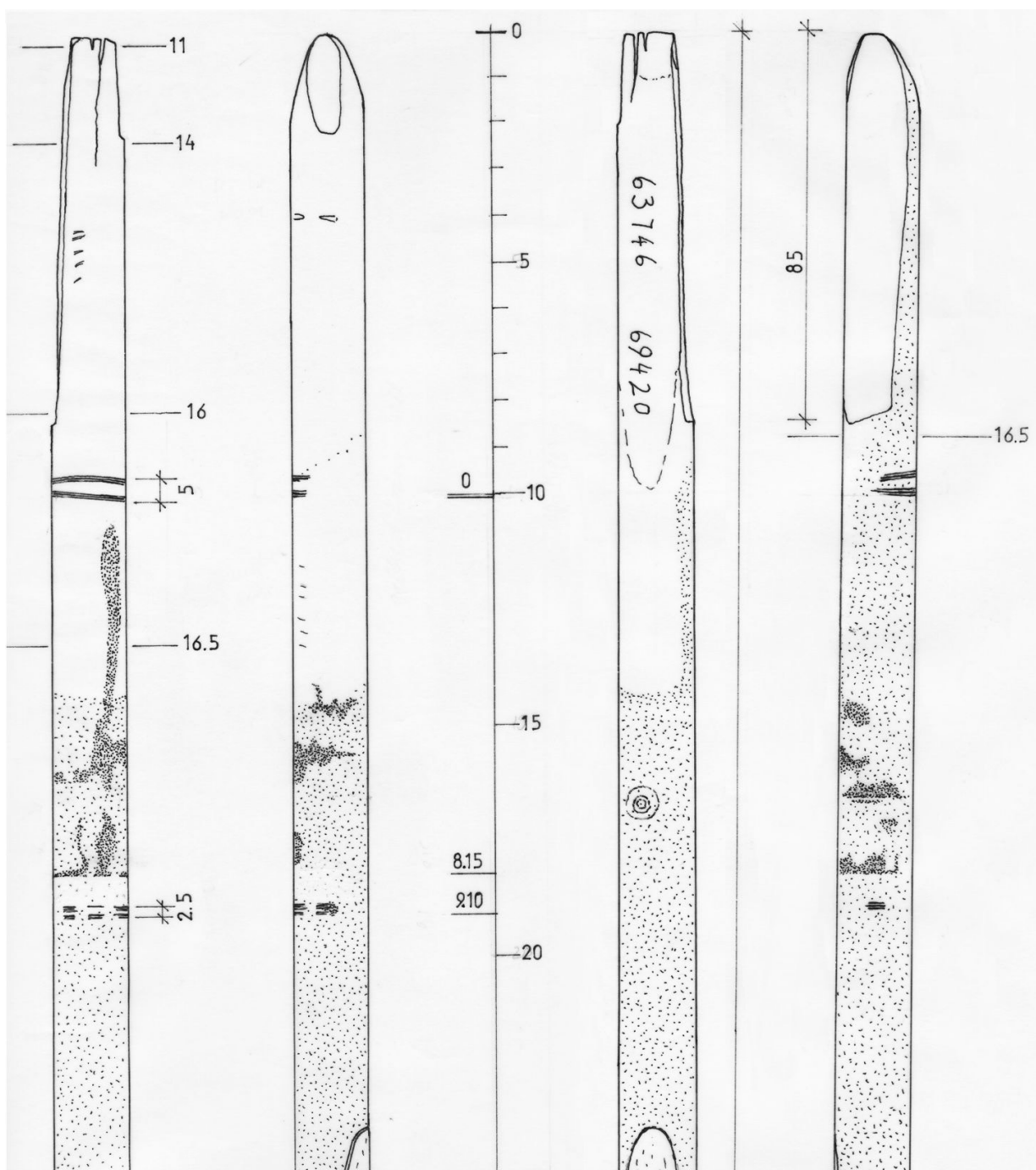Fig. 8a. Spike lute from Deir el-Medina (18th Dyn.): General views from all sides.

Fig. 8b. Spike lute from Deir el-Medina (18th Dyn.): Fret imprints on the upper end of the handle; drawings after Eichmann 2004a, 561, Fig. 1.

4. Conclusions.

The spike-lute appeared in Egypt during the 17th or later, in the beginning of the16[th] century B.C. It was most probably introduced by migrants or in the course of frequent cultural exchanges between Egyptian and Near-Eastern elites, which led, among other trends, to a cultural *koinë* or an international style of art[46]. Accordingly, lutes (and other instruments) of identical construction were common in Egyptian, Mesopotamian and Hittite sites. From the Egyptian New Kingdom (2nd half 16th – 12th century B.C.) it is known that hundreds of captive female musicians, dancers or singers, were brought to Egypt. Amenhotep II, for instance, is reported to have brought, among other people, 270 foreign female court musicians from his campaigns in the Levant[47]. If we assume that these musicians performed songs and melodies of their own musical repertoires, they might have done so in respect of Near-Eastern theoretical principles and musical traditions.

From the study of ancient Egyptian lutes, I contend that both minor thirds and 'neutral thirds' were in use in the Near-East in the second millennium B.C. This cannot be proven yet with ancient Near-Eastern musical instruments, where none has been excavated[48]. As in the case of Egypt, iconographic sources allow at least for the assumption that musical intervals could have been precisely defined with the help of fretted instruments[49].

Under such conditions, textual evidence becomes crucially important. From a study of cuneiform tablets of the second and first millennia B.C. it is known that heptatonic scales were common in the Near-East[50]. Konrad Volk wrote that Mesopotamians probably anticipated the ancient Greek heptatonic diatonic modal system[51]. It is conjectural, however, to say how precisely these scales and modes were built. According to Stefan Hagel, the fine tuning of scales was based on a just intonation[52] (not on a Pythagorean intonation or on tempered tuning). He does not agree with a major influence of music theory from the Near-East to Greece: 'A comparison with ancient Greek music suggests a largely independent development of musical form from at least as early as the first half of the second millennium'[53]. Leon Crickmore however does not exclude a possible connection: 'The evidence cited from archaeology, musicology and the history of mathematics indicates the likelihood of the existence of a musical and mathematical tradition […] lasting at least from nineteenth century Mesopotamia until fourth century Greece[54].' Recent interpretations of the cuneiform tablets encouraged by the International Conference of Near Eastern Archaeomusicology (ICONEA) have led to alternative explanations of ancient Mesopotamian heptatonic scales and their fine tuning[55], which according to Richard Dumbrill would not exclude the possibility of 'neutral thirds'[56].

Notes

1 Catalogues of musical instruments: Ziegler, Ch. 1979 (Louvre); Anderson 1976 (British Museum); Hickmann 1949 (Egyptian Museum Cairo); Sachs 1921 (Egyptian Museum Berlin); musical instruments and philological sources: Hickmann / Manniche 1989; Manniche 1975; Lieven 2004.

2 According to the classification of musical instruments by Erich Moritz von Hornbostel and Curt Sachs (see *GSJ* 14, 1961, 3 for an English version) a lute is a composite stringed instrument in which the plane of the string runs parallel with the sound table. String bearer and resonator cannot be separated without destroying the instrument.

3 Green 1992; Lieven 2008; Lieven 2002; Eichmann 2001 [on p. 478 read 'Sesostris II (19th century B.C.)' instead of 'Amenophis II (1938-1904)'].

4 Recently, a carved cylinder seal attributed to the late Uruk Priod of Mesopotamia (around 3100 BC) and depicting a boat scene has been quoted as evidence of a lute player in the late 4th millennium B.C. (Colon 2001). From a methodological point of view, this seal cannot be used as evidence of an early Sumerian lute: (1) The seal is of unknown provenance. No science has been applied yet to the analysis of that artefact's patina and work traces. (2) The iconographic scene is basically known from other seals of that period (Collon 2001, Figs. 2.3). Significant features are a boat with navigators at both ends: a seated person with a paddle used as rudder in the rear (the alleged 'lute-player') and a person punting the boat with a pole in the front. (3) The seal is heavily worn and had been crudely recut at a later stage (D. Collon 2001: 'this recutting is probably recent' which is indicated by grooves that are not worn at all). The arm of the alleged lute player and the stick clearly represent later additions. (4) The representation of the lower part of the paddle/rudder (the assumed 'sound-box') is not preserved/not visible (a drawing provided by R. Dumbrill 2005, 340, Plate 4 and 5 is not supported by the artefact). There are no traces at all that could be interpreted as the sound-box of a lute. In addition, it is impossible to indicate the gender of the depicted human figures (alleged a 'female lute player', Dumbrill

2005, 340). (5) Putting everything together: for archaeological, iconological and iconographic reasons the mentioned seal is not valid evidence for music archaeological reconstructions. Thus, one has to wait for the excavation of more convincing artefacts that could confirm the development of lutes in the pre-Akkadian period.

5 Krispijn 1990. More recent translations, however, are not that explicit with regard to the lute: http://etcsl.orinst.ox.ac.uk/section2/tr24202.htm (see lines 154-74).

6 Eichmann 2001, 479, Fig. 4; Rashíd 1984, 146 (lower illustration), 147 (Fig. 174); Eichmann 1988a, 604, Fig. 10a-f.

7 Vendries 2012; Eichmann 1988a, 608.

8 Eichmann 1996 and 2000. In addition, there are single parts of lutes from different excavations, kept at the British Museum, the Egyptian Museum Cairo and the Louvre, among other places.

9 Eichmann 2004a.

10 From a third tomb comes evidence of a miniature lute of which only the stick and a tortoise shell seem to be preserved (Lieven 2002; Eichmann 2004a, 559, 567, Fig. 12).

11 The cords were fixed at the upper end of the strings. Hickmann 1949, pl. 99, 101. Tassels are attested iconographically, see for instance Eichmann 2004a, 565, Fig. 9.

12 Eichmann 1988b; Eichmann 1994, 4, Fig. 3; 6-7, Fig. 4.

13 These traces are not yet documented; cf. Ziegler 1979, 124, IDM 129; Eichmann 1994, 8, Fig. 5.

14 All instruments had been studied in Eichmann, 1994. For a re-evaluation of instrument no. 1 (Antinoé/Musée des Beaux Arts Grenoble) see Calament / Eichmann / Vendries 2012. Instruments no. 2 (Saqqara/Egyptian Museum Cairo) and no. 7 (unknown provenance/Metropolitan Museum New York) have been re-studied by the author. For a new documentation of the fret positions of lute no. 2 see Calament/Eichmann/Vendries 2012, Plan 4; for lute no. 7 cf. here Fig. 4 and fn. 17. A more detailed documentation of both instruments is in preparation.

15 In one instance (lute from Saqqara) the lute was found in a Coptic monastery cemetery (Eichmann 1994, 24-25). So, it may be possible that the lute had been used (among others?) for music in religious contexts.

16 Vendries 2012, pl. 33.

17 Please note that the measured fret distances of instruments no. 1 and no. 2 have slightly changed, cf. Calament / Eichmann / Vendries 2012, 76-84 (no. 1), pl. 4b (no. 2). The measurements of possible fret imprints on lute no. 7 based on an analysis of photographs (Eichmann 1994, 149, tab. 11) are no longer valid. They should be replaced now by new measurements taken on the original instrument by the author on July 19, 2004): Fig. 4: 1st fret 28-29 mm, 2nd fret 49-50 mm, 3rd fret (a) 64-68 mm, 3rd fret (b) 74-75 mm, 4th fret 98-99 mm, 5th fret 116-117 mm.

18 Eichmann 1994, 64-91. – cf. also previous fn.

19 Hickmann 1961, 71, Fig. 41.

20 Several musical ensembles including male and female lute players are depicted in wall reliefs and paintings (cf. Hickmann 1961, 69, Fig. 39; 71, Fig. 40; 83, Fig. 51; 99, Fig. 61.)

21 Germer 1985.

22 Personal communication from the excavator, D. Polz (German Archaeological Institute Cairo). A report and analysis of these instruments is being prepared by S. Emerit (Cairo).

23 Asensi Amorós 2012.

24 Cappers 2006.

25 Eichmann 2004; 1994; 1988b.

26 Eichmann 2004b; 1994, 123.124.

27 This could already have been practiced in the 1st millennium B.C. with spike lutes of the Abusir el-Meleq type.

28 Eichmann 2004b.

29 Eichmann 1999.

30 These measurements were taken in 2006 (9th October). A first series of measurements was taken in 1997 (December 9/10): 1.00-1.05 mm, 0.85-0.95 mm; 0.85 mm, cf. Eichmann 2000, 37. Each string was measured at different points of its preserved length, which is less than 10 cm. All measurements were taken with a mechanical sliding calliper. Please note that the measurement accuracy depends on the force applied to the slider of the calliper. This effect may explain the differences between both series of measurements.

31 Eichmann 1994.

32 Eichmann 2012, 82.

33 Eichmann 2012, 81.

34 According to Emmie te Nijenhuis quite similar musical scales were known from medieval India, possibly dating back to the middle of the first millennium A.D. (Nijenhuis 2002). This possible analogy is not supported by textual or archaeological evidence yet. However, it is known that direct contacts between Egypt, namely between the Red Sea harbour of Berenike in Egypt and south as well as west India already existed in the first centuries A.D. as a consequence of Roman maritime trade (Sidebotham, S./Wendrich 2001).

35 Vendries 2012, pl. 33; Eichmann 1994, 102-9.

36 Eichmann 1994, 37, Fig. 17; attachment 3 (lute no. 3) and 6 (lute no. 6).

37 Eichmann 2012, 80, tab. 4 and 82, tab. 6.

38 Eichmann 2012, 80, tab. 4.

39 As far as deviations from standard pitches are concerned, it must be remembered that the size of an interval depends on a number of variables. Even our modern instruments are not perfectly tuned. The intervals which can be performed with a recorder, for instance, sometimes differ up to about 30 cent (Mühle 1979, 32, Fig. 20). Of course, there are a good number of possible interpretations, which are still to be explained by experienced and specialised musicologists.

40 Eichmann 2000, 36 ff.

41 Eichmann 2004a, 555-57.

42 A similar practice seems to be attested on Coptic lute no. 7 (see Fig. 4 and fn. 17, fret 3a and 3b).

43 http://egyptsound.free.fr/fathi.htm

44 The flutes which allow the 'Arabian scale' to be performed are, as far as I know, not dated yet. Formal features however indicate that they could come from the Pharaonic Period.

45 Hickmann 1961, 83, Fig. 51.

46 Green 1992 (Asiatic musicians at Egyptian courts); Lieven 2008; Eichmann 2001 (on p. 478 read 'Sesostris II (19th century B.C.)' instead of 'Amenophis II (1938-1904)'; Feldman 2006 ('international style').

47 Green 1992; Eichmann 2001, 480.

48 For iconographic and philological evidence of Near Eastern lutes see fn. 4 and 5.49 So far, the iconographic repertory of lutes comprises very few fretted

instruments, see for instance Eichmann 1988. With reference to the Egyptian finds, short spike lutes could have been equipped with frets. The large lutes, however, do not show any traces of frets.

50 Kilmer 1974, Kilmer/Crocker/Brown 1976, Volk 2006.
51 Volk 2006, 43.
52 Hagel 2005, 312.
53 Hagel 2005, 343.
54 Crickmore 2009, 6.
55 Crickmore 2008; Dumbrill 2008; Halperin 2008.
56 R. Dumbrill, personal communication.

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AN UNUSUAL DEPICTION OF A LUTENIST IN REKHMIRE'S TOMB AT SHEIKH ABD EL-QURNA

Dagmar Krejčí

Peter Zamarovský

1 Introduction

There are a number of drawings, bas-reliefs and other depictions of musical scenes among the wealth of Egyptian iconography. Early New Kingdom archaeological records first attest of long-necked lutes with tuning thongs, and it is generally accepted that they were introduced some time during the late Second Intermediate Period, (1640-1540 B.C.) under Hyksos domination in Egypt. The Hyksos probably came from Ancient Canaan and Syria. Additionally, some artefacts found in these regions show depictions of lutes and lutenists. However, lutes must have appeared much earlier as revealed on a cylinder seals from Uruk. (3200 - 3000 B.C.) In the Ancient Near East, the lute was represented alongside deities but it was also popular among common folk as singers' accompaniment. It is therefore probable that the Egyptian lute came from the Ancient Near East.

In Egyptian contexts, however, the harp had a more important status. With the harp, pitch is determined by string length and tension while with lutes pitches are produced by pressing strings with fingers onto the neck or fingerboard thus shortening their speaking lengths. This new playing technique was a novelty to the Egyptian world of music.

During the Egyptian 18th Dynasty, (1540-1307 B.C.) there were two types of long-necked lutes.

The soundbox of the first lute was made from wood in the shape of a cartouche and the second with a tortoise shell or calabash. They were played by women, less frequently by men and were held close to the chest whether the musician was sitting, standing, walking or dancing.

Among the many depictions of Egyptian long-necked lutes, there is one example which appears to be unique because of its handling. It was found in western Thebes, in the tomb of influential vizier Rekhmire, at the Sheikh Abd el-Qurna necropolis.

2 Description of the tomb

Rekhmire's tomb (TT100) was dug during the 18th dynasty reigns of Tuthmosis III (1479-1425 B.C.) and Amenhotep II (1436-1413 B.C.). It is about six hundred meters to the west of the temples of Tuthmosis III and Amenhotep II. The tomb is 'T'-shaped. At the onset of the main long chamber passage, at the entrance hall of the tomb, the ceiling is about three meters high and rises to about eight metres at the back. Neither burial shaft nor sarcophagus was found, so it appears that Rekhmire was not buried there.

Rekhmire was an exceptionally influential ruler, vizier of Upper Egypt, mayor of Thebes with over one hundred titles. He was the most powerful man after the king and swiftly rose to fame but fell to an unexpected demise[1]. Rekhmire lived during Tuthmosis III's Golden Empire, stretching as far as the Euphrates in the Near East, winning military victories making Egypt one of the richest countries. Thousands of objects were brought back to Egypt along with great quantities of rare raw materials.

3 Musical scenes

In the tomb, on the northern wall of the main passage, there are about three hundred square metres of paintings with three musical scenes of the highest quality. They are part of a festive preparation - a celebration of Rekhmire's eternal underworld dwelling. Out of eight registers, four are of men with seventeen scenes, and four with women also with seventeen scenes, probably from a harem. Male and female scenes included a total of one hundred un thirty nine individuals. Two male and female musical ensembles face Rekhmire and play for him.

Fig. 1. Female group of musicians with a harpist, a lutenist, a tambourine player,
girls playing clappers and three singers (?) inhaling scent from lotus flowers.

Fig. 2. Male ensemble with a harpist and a lutenist. The inscription on the plaster reads:
'Myrrh in hair of Maat, health and life with it let be in myself.'

The musicians' mouths are closed. It is impossible to say whether females or males sing, or declaim. According to Davis, all are singing. The texts of the songs are written on the background, close to the singers[2]. Between male and female scenes on the fourth register from the bottom a great threefold figure consisting in either three persons, or a single person with three positions, sit(s) in a style reminiscent of cheironomists[3]. They might have played or sung antiphonically.
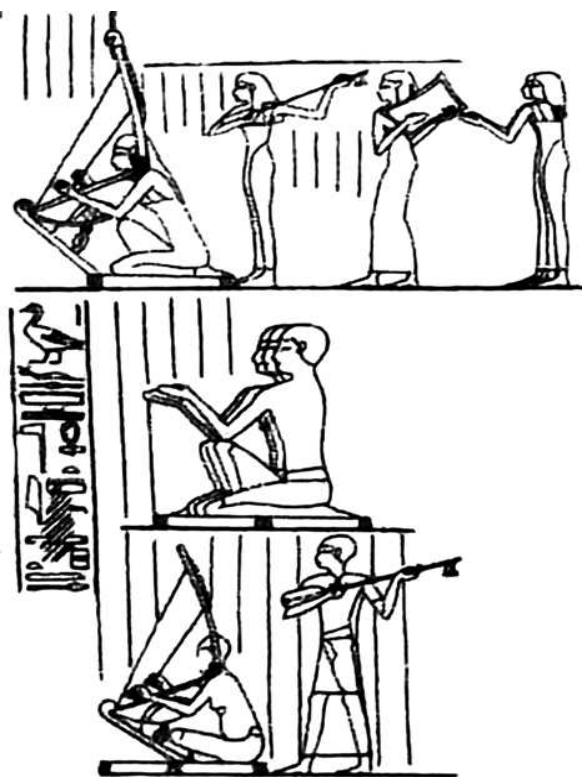
Fig. 3. The 'three-fold' cheironomist between female and male registers. (according to Davis, 1963)

There are three lutes in the depiction of Rekhmire's festive preparation. This could suggest Rekhmire's liking for this instrument. From a musical point of view, it is worth noting that harp and lutes are played together. It would be interesting to know if and how they were tuned to each other. Harps, obviously, played the dominant role. It is obvious that the woman's harp was more important than the lute since it bears goddess Maat's symbol and that is closest to Rekhmire. Both harps have nine strings with double string at the bass[4].

Female figures are arranged into seventeen scenes with sixty seven ladies and girls, in four registers. Women are divided into three groups according to their role.

Fig. 4. Harp with a doubled bass string.

Fig. 5. Showing three distinct classes of women: 1) Women sitting on a mat, 2) helpers in white dresses standing to the left and 3) maids wearing darker brown dresses.

a) Noble ladies facing Rekhmire. The character depicted in the middle of the scene is Rekhmire's mother. She is sitting on a chair, while other ladies kneel on mats. The noble ladies are drawn larger than maids and helpers. They are dressed in tight white tunics with straps, and wear protective necklaces or collars (Usekh).

They have long hair or wigs with aromatic cones on their heads. They wear lotus buds and flowers[5]. The ladies are drinking, probably wine or beer, and the dishes around them may contain ointments.

b) *Helpers* (?), who are standing wear white tunics with straps, without lotuses or necklaces. They hold or hand out attributes. Their hair or wigs are shorter. One of these women is filling Rekhmire's mother's cup.

Fig. 6. Maid showing her back with incorrectly drawn legs.

c) *Serving girls or maids* are standing. Their hair are pigtailed but could be wigs. They wear dark brown sleeved tunics. Some of them are dark-skinned. The artist depicted them more dynamically, even in frivolous poses. One of them is even drawn in a back three-quarter view revealing her posterior. Another interesting detail shows her legs drawn incorrectly, perhaps intentionally. These girls might have been captives from the Near-East and later educated in Egypt. Among them stands the lutenist also represented in an unusual posture. Regarding the social hierarchy of servants and helpers, Davis considered helpers to be of a lower social status than serving girls, or maids, who were probably the daughters of noble ladies.

4 Around the lutenist. The lutenist is depicted in the third register with women in the first group to the left. A lady or ladies kneel on a mat in front of her. Whether there are three of them who are depicted of whether it is the same person represented in three different positions is unclear[6]. A maid and a female helper are presenting her with a drinking vessel and perhaps ointments. The text above the lady reads: '*Can it be Maat in whose face is desire for deep drinking*?' or '*Is there verity in her face enthusiastic by drunkenness*?' as translated by Landgráfová. The text seems to be a commentary rather than a song[7]. It was customary for members of higher classes to get drunk with wine and beer, frequently. According to Davis, three ladies mark the beat for the lutenist. However we find it more likely that the tempo was given by the individual in a lower register, probably a cheironomist.
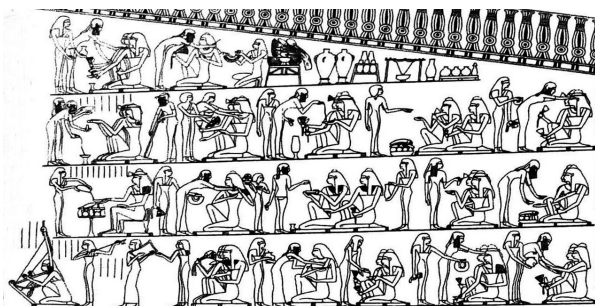
Fig. 7. Female scenes

5 The lutenist. The lutenist drawn is forty-four centimetres high. Unusually, her right leg, furthest away is placed behind her left one. She is handling, as other lutenists, a long-necked lute with a wooden soundbox. Her lute is depicted at a peculiar angle, sideways. It has three thongs, but only two hanging tassels are seen. The third tassel must be hidden by her hand. Neither tuning pegs nor frets are shown.

The position of the girl's left hand thumb shows that she is playing. However, her playing position is atypical. How was she really playing?

Was the lute bowed? In an earlier paper, we advanced that the maid was bowing her lute as the implement she seems to be holding could be interpreted as a bow. Should this interpretation be correct, it would be the first depiction of such, not only in Egypt, but in the whole of the Mediterranean world. This interpretation is based on an seemingly appropriate bowing posture.

Fig. 8, a and b. Women on the upper register with lutenist.

Her left hand appears to be pressing a string, or strings to shorten its, or their speaking length(s). Davis writes that '...*the lute is resting on the ground like a cello*'. We would like to propose that since she is standing, she might be playing '*pizzicato*', as she would on a double bass.

However this hypothesis is unsafe because to start with, neither bow nor plectrum are clearly seen. The assumption that it might be a bow rests on the hypothesis that the damage to the painting resulted in a 'bow' shape. A more general objection is that no bowed instruments have ever been found in the region or elsewhere at that time, and no other such depictions have been attested at that period.

Was this lute plucked? This assumption was brought up by Arroyo as a response to our paper. Ancient lutes were usually played with a plectrum, but in this case, the posture of the lutenist is not the most appropriate not to mention that a plectrum remains elusive.

The lute was strummed with fingers or with fingers prolonged with thimbles. This might be a possibility as her fingers are slightly raised. However, there remains the question of why she holds her lute in such an unusual position.

The lute is being tuned. Although atypical, the position of the lute would infer that being too heavy for the lutenist, she would have tuned it resting in this position.

There are several arguments against this possibility. Principally, strings cannot be stretched or relaxed in this position as the lutenist's left hand is far too much below the fastening emplacement of the thongs which must be pulled out and pressed against the neck, much higher.

As far as we know there is no other depiction of a maid tuning or playing an instrument during burial ritual preparations. Maids were not musicians and therefore did not tune instruments.

The lutenist gives the pitch to singers. However, this does explain this unusual position.

6. The lutenist performs a ritual.

She could be performing an act unconnected to music. Might it be a magic ritual dedicated to the lady and not to Rekhmire? Might it be some form

Fig. 9. The lutenist

of massage as the lute rests on the sole of the kneeling lady's foot, perhaps releasing some kind of energy by means of vibrations.[8]

However, many rituals remain unknown and therefore this hypothesis is inconclusive.

6 Conclusion

The most probable reason for the unusual position of the lute is that its resting on the lady's sole was essential for some ritual which remains elusive. The lutenist serves the lady as do the other two girls facing her. The depiction of the lutenist in Rekhmire's tomb remains therefore enigmatic.

Notes

1 This could be the reason why Rekhmire was not buried in his tomb. According to another hypothesis, there was no downfall and he was buried in a greater tomb nearby, in the Valley of the Kings, but his tomb has not yet been found.

2 Text near the women: *'(Put) balsam on the locks of Maat, for health and life are with her…! O Amun, the heaven is uplifted for thee, the ground is trodden for thee. Ptah with his two bands makes a chapel as a resting (place) for thy heart. … Come, o north wind! I saw thee I was on the tower (?).'* Near the men: *'Sweet north wind to thy nostril and breath to thy nose! Take possession of the offerings of royal giving which have gone up on the altars of the lord of all, that thy KA may be solaced thereby. O mayor, praised by Amun, Rekhmire'* (Davis)

3 The role of the cheironomists was perhaps to conduct the music. There are many depictions of cheironomists from the Old Kingdom, but we have none from the New Kingdom.

4 The harps evoke the nine-tone Old-Babylonian pitch set.

5 Inhalation of lotus aroma in higher society is a frequent subject of depiction in tombs. The lotus represented resurrection or immortality. Its flowers and rhizomes contain four types of alkaloids which have a narcotic effect if drunk, but inhalation is not narcotic.

6 There is a similar situation with the figures of the maid or maids on the left.

7 It is not clear whether the text is dedicated to the kneeling lady or to the goddess Maat. According to Landráfová, a singular form is used.

8 It seems that the contact with the sole of the foot is not just an apparent contact, *i.e.*, due to the geometrical alignment. The ancient Egyptians tried to depict everything clearly, without confusing alignments. They avoided confusing the situation for those 'reading' the depiction. (Although they used alignments to express multiplicity, or various stages of motion, this is not the case here.)

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A SMALL LUTE
FROM SUSA
AND
ITS RECONSTRUCTION

Margaux Bousquet*

Introduction

In the course of its history, Susa has been at the centre of cultural crossroads. (Fig. 1) It was at times influenced or conquered by Mesopotamian civilisations[1] and at others it came back to its Iranian and especially Elamite roots. The terracotta figurine under scrutiny in the present paper is Elamite and can be dated to the early second millennium B.C. when Susa was under domination of the Sukkalmah[2] Dynasty.
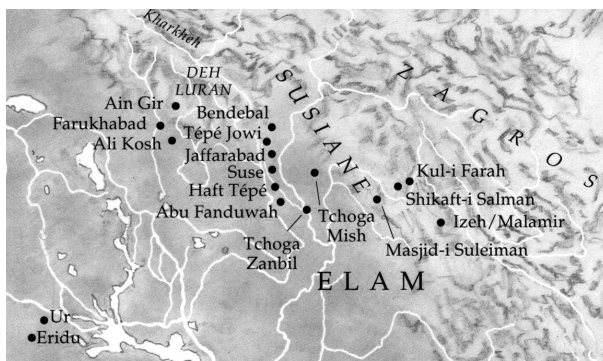

Fig. 1. After Caubet, A., *La Cité Royale de Suse*, (Paris, 1994)

It is during the same period that terracotta figurines became more or less standardized with the usage of moulds allowing for fast and simple production[3]. Terracotta figurines and clay plaques proliferated revealing popular tastes and interests. Susa was not excluded from this trend where it became

* Margaux Bousquet, Universite de Paris I Pantheon-Sorbonne (ED-112). UMR 7041 ArScan Equippe VEPMO (du Village à l'état au Proche et Moyen-Orient).

a favourite medium for the depiction of musicians[4].

Figurine Sb 7805 [5]

Among a large corpus of clay items published by Spycket in 1992, males are depicted standing, with a long robe down to their feet. They wear ovoid head-dresses. Most of the examples came from levels XV to XIII of the 'Chantier A' at Ghirshman, north of the Royal city of Susa.[6]

With regard to their peculiar garments, these male subjects were identified as being part of a corporation dedicated to the cult of the Sukkalmah[7]. Three principal types are noted: 1) males holding a curved stick and holding a small monkey in the curve of their left arm, 2) males carrying particular objects which might have been small harps, 3) males playing small lutes. (fig. 2) Lute players are of two types: some are bearded without necklaces while others are clean-shaven and wear rounded or crescent-shaped pendants which is the case with the figurine under scrutiny. On account of their garments and pendants, Spycket proposed that they were of Syrian origin[8]. A well-preserved example of a lute player is exhibited at the Louvre Museum (Sb 7805).

The purpose of this paper is to study the instrument depicted and propose its reconstruction as it is atypical and sufficiently well-preserved to attract academic interest. This lute is of a small overall size. It was held horizontally. The ovoid sound-box rested in the hollow of the right elbow. The neck sprouts from it, its peg-box hidden by the left hand depicted in a playing position. The other hand is also shown plucking the strings with fingers joint together but without a plectrum. There are marks on the sound-box as well as on the neck. (fig.3) Measurements were taken proportionally to the subject. The length of the sound-box would have been about 19.2 cm which equates to more or less 12 *ubānātu*[9]. While measuring the width of the neck in relation to the sound-box, it seemed that its diameter would have been about four centimetres, which at first sight appeared to be quite unfit for playing. Consequently it was assumed that the section of the neck would have been ovoid rather than round. A protuberance is clearly seen at the bottom end of the sound-box. This suggests that a piece of wood would have been added, and served as bridge and anchorage of the strings.

Fig. 2. Figurines from Susa, early Second Millennium B.C., Louvre Museum (Sb 7834, Sb, 6574, Sb 7805)

Additionally, another well preserved example[10] unequivocally shows a rounded bridge around the neck (figure 4). So both bridge and neck would have been shaped to fit one another, as shown on figure 4.

How were the strings attached to the neck?

Although the anchorage of the strings is not visible on the figurine under scrutiny, two lutes (fig. 5a) from the same series[11] also have a small protuberance at the bottom end of the sound-box. This suggests that the end of the neck was designed in order to provide with an appendix to accommodate the anchorage of the strings. This feature was quite common in lute-making. The method might have survived from pre-literate musical bows (fig. 6) which were placed over bowl-shaped resonators[12] with their strings attached at both ends. This method is later attested in Ancient Egypt[13]. The bridge and the neck would have been attached to one another, and then the appendix would have been carved in position. (fig. 5b)

The soundboard was most probably made of raw-hide which was the most readily available material, also well attested in Ancient Egypt with extant models[14]. Goat-hide was used for our

replication. Once cut to the appropriate size, the damp hide was placed onto the sound-box, attached with twisted leather thongs and incised in four places to allow for the insertion of the neck. (fig. 7) Once dry the hide and the thongs would have tightened maintaining the neck in place without need for any other means of fixation than the natural glue which it naturally exudes.

The method of anchorage of the strings on the nut is conjectural since the hand of the player hides what it might have been. Nevertheless, there are not many possibilities known in the antiquity. Tuning-pegs might have been used. However, their usage is only seen in earlier Akkadian types depicted on seals and seal impressions[15]. Furthermore, during the second half of the second millennium B.C. Susa, hanging tassels are clearly seen on instruments played by nude musicians (fig. 8) as well as much later in Iran, especially on a situla from Luristan[16].

Two strings made of twisted gut were set. Dumbrill[17]explained how they might have been fastened, each attached to a cord rolled round the neck in such a way that it allowed for easy increasing or decreasing of their tension.

Fig. 4. Bridge detail. See below.

ca. 35 mm

ca. 26 mm

ca. 192 mm

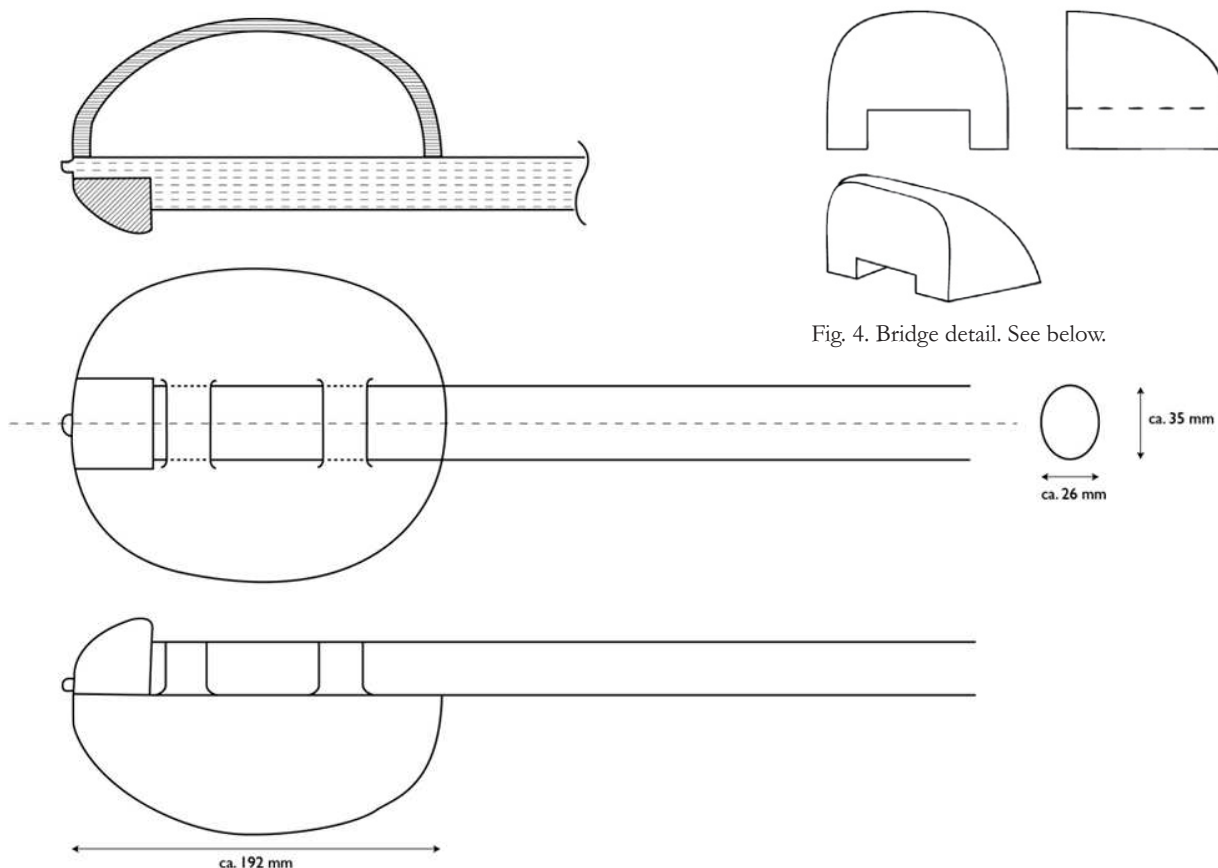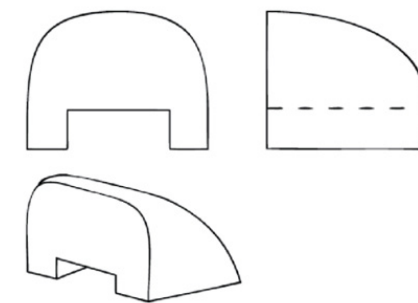Fig. 3. General plan of the Lute

Fig. 4. Bridge details from the iconography and reconstructed. (above, after Spycket, 1992, M20; below, Sb 7805), and recunstruction.
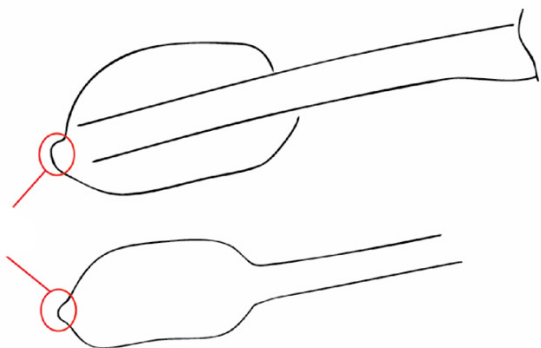
Fig. 5a. Lute examples from the same series.
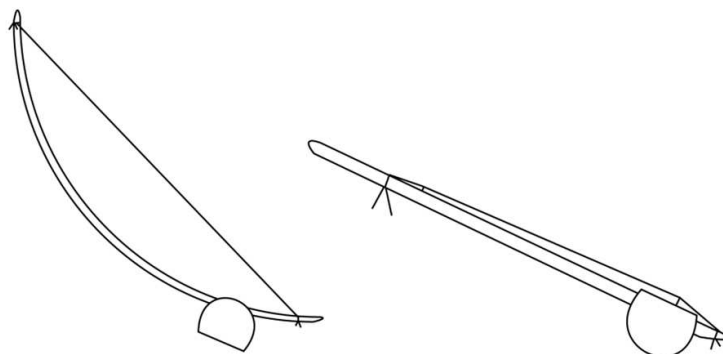
Fig. 5b. Bridge, neck and appendix.

Fig. 6. Musical bow and its hypothetical evolution as a lure. After Dumbrill.

Fig. 7. Soundboard attachment.

Materials and tools

In order to build their instruments, artisans would have used materials readily available from their near-by environment, because of their original shape and properties which would have been predisposed to instrument making, as well as for their tensile and sound transmitting properties. Initially they would have used materials that were already used in their daily life. Clay or gourd recipients containing foodstuffs would have been sealed with wet raw-hide. It is easily understandable that these storing methods would have soon led to the usage of these implements firstly as primitive drums and then logically as sound-boxes for stringed instruments. However, as primitive musical implements developed to become musical instruments, materials employed were chosen more carefully. We know that at Mari, for instance, certain woods essences were preferred for their making[18]. Their choices were even commented[19]. With time some of these instruments became ornate, some plated with precious metal sheet such as gold or silver and inlaid with semi-precious stones such as lapis lazuli, carnelian, haematite, etc. Regarding instrument making, the Mari Archives constitute certainly the most important source. However, administrative texts from Mesopotamian sites during the second half of the third millennium B.C. are also most instructive[20].

Up to this day texts from Susa have not yielded much about instrument making. Thus we can only rely on comparative analyses. We may assume that lute these particular players might have belonged to a particular class. Spycket proposed that they were associated to cultic corporations. It is therefore possible that lute making would have implied specific rituals, on totemistic or other grounds.

If gourds, turtle carapaces and wood might have been the choice materials for sound-boxes, wood certainly would have been used for the making of necks, bridges and pegs. In earlier types, reeds would also have been used as necks. But considering the small size of the instrument, the sound-box might also have been carved from a single log as it was during the XVIIIth Egyptian Dynasty[21]. Texts from Mari reveal a preference for hard woods such as ebony[22], maple[23], or *elammakum*[24]. Susian makers might have used maple, as it was available in the Elamite Tall-I Malyan[25]. Texts from Mari

also mention the *elammakum*[26] as a precious wood known for its excellence for making the *le'um*. This essence was also known at Susa where it is known from an Old Babylonian school text[27].

A calabash was used for the sound-box in our replication. Nowadays the calabash is commonly used for the making of various objects, among them musical instruments. The fruits are easily shaped while growing and become very hard when dried. Although there is no palaeobotanical evidence for the calabash, or bottle gourd (Lagenaria Siceraria) in Ancient Near-Eastern sites, it was known in Ancient Egypt and it is therefore reasonable to assume that Ancient Near-Eastern cultures used them also. The calabash might have been known as *naṣṣabu* (or *namṣabu* as it occurs in a lexical text : úkuš.kur.dil. lumsar = ŠU = *nam.ṣa.bu*), as advanced by Stol[28]. The úkuš family referred to cucurbitaceae type, of which belongs the calabash.

Another type of cucurbitaceae, the *tigilū*, is also recognized and was identified as the colocynth (Citrullus colocynthis)[29]. In 1987, Civil[30] made a very interesting comparison of the term *tigidlu*, name of a bird and a musical instrument, and the *tigilū*-gourd. He proposed that the *tigidlu*-bird was named after the musical instrument, for a sound-like resemblance with it, and that *tigilū*-gourd originally was used for the musical instrument[31]:'[…] one could assume that 'gourd'> musical instrument > bird name, in which case the instrument would be a 'gourd', *i.e.* a maraca or the like.'

During the Old Babylonian period, the *tigidlu*-instrument is written either [giš]ŠA$_3$.TAR or [giš]DI.TAR[32], in a Nippur lexical text, and is listed as follows:

613 [giš]tigidlu
614 [giš]tigidlu-kaskal-la
615 [giš]tigidlu-sa-III
616 [giš]tigidlu-NIM-ma[33]

Line 615 is a *tigidlu* with three strings, which would likely define the *tigidlu*-instrument as a lute[34]. But the term could be the reminiscence of the shape of a very primitive instrument using a gourd as basic material[35]? Among different types of *tigidlu*, as *tigidlu* for travel ([giš]tigidlu-kaskal-la), *tigidlu* with three strings ([giš]tigidlu-sa-III), there is a *tigidlu* from Elam ([giš]tigidlu-NIM-ma).

Goat raw-hide was used as soundboard material as it has been suggested in aforementioned descriptions. In the Ancient Near-East, animal hides were the object of specific curing when destined to instrument making and were often dyed. In Mari, alum *gabū* was used as a fixating agent in addition to which the *ḫūratu* dye, was added. It might have been the red dye madder[36].

Twisted leather thongs were used to attach the soundboard onto the calabash. It could also have been glued[37]. Strings were made of twisted gut, or of tendon (SA = *pitnu, ser'anu*).

At Mari the *nagāru*[38], was a carpenter specializing in instruments making. It is highly probable that it was the case in Susa. The replication required basic tools that would have been found in any carpenter's tool kit[39] and would have included the adze, saw, chisel, gouge, etc. All of those tools were found in Susa[40] at different locations.

Ligatures, frets, fret-marks or marks?

Of all Ancient Near-Eastern string instruments, the lute is certainly the most interesting because only two or three strings allow for a wide range of tones compared to harps and lyres which have a similar ambitus but from many more strings. However, their depictions only provides with a few clues with regard musicology. The lute from Susa is therefore an exception as the marks on the neck of the instrument were quite probably suggesting ligatures, frets, or fret marks[41].

A scaling hypothesis for this instrument could be construed on the basis that it relies on the accuracy of the artist in his depiction of details regarding the position of markings, whether ligatures, or frets, or fret-marks or simply marks. But this is quite irrelevant in determining the scaling and therefore we shall call them frets, generally. We shall attempt at deriving fret ratios from Sb7805 and then investigate if these figures are musically coherent[42].

Several measurements were taken from a single point on the bridge to each of the frets. Distances measured would equate to the speaking lengths. These, in turn, were converted into simplified musical interval ratios. (fig.10)

The ratio between fret 2 and fret 1 is 9:8. It is a major tone. The ratio between fret 3 and 2

is 4:3. It is a just fourth. The fifth (3:2) is deduced from F3 and F1 and is proven from ratios of length. Now, the ratio between F4 and F3 appears to be different: 27:25[43] and 14:13[44]. They are semitones.

A similar figurine, probably made from the same mould, also shows marks on the neck. Measurements of the frets in M20 appear to be similar to the previous figures. (fig. 11)

A tone of 10:9 is placed between F2 and F1. F3 and F2 have a ratio of 9:7 which equates to a super major third interval[45]. Lastly, the ratio between F4 and F3 is 41:38, which is almost a 27:25 semitone. The ratios in M20 are almost the same as with Sb 7805.

Another essential point remains. The emplacement for the nut must be defined. Without it the speaking length cannot be calculated and neither can be the scaling of the instrument. Since the musician's hand hides the end of the neck, we can only logically suggest possibilities. From the measurements of the figurine, we can calculate the emplacement for each frets on our replication. The first fret would be at 160 mm from the bridge, the second fret at about 180 mm, the third, at about 237mm and fourth fret at about 256 mm. A common unit of length in the Ancient Near East was the ŠUSI, akkadian *ubānu*, which equates approximately 16 mm. Considering the size of the musician's hand, and relying on the *ubānu*, only one possibility makes sense: 20 *ubānātu* = 320 mm. (fig. 12) With a speaking length of 320 mm, fret 1 defines the octave. An octave defined on fret 2 would not fit, as the emplacement of the nut would not have left enough space to secure the strings.

Figure 12 shows lengths calculated from the bridge to each one of the frets and to the nut, as is on our replication. The ratios deduced from those lengths fit with those already calculated from the figurine. (fig. 10) We have a tone with 9:8 between F2 and F1, a fourth with 4:3 between F3 and F2, a semitone with 27:25 between F4 and F3. The speaking length, from bridge to nut being 320 mm, the first fret interval (N:F4) gives a major third with 5:4. N:F1 defines the octave at 2:1. Other ratios resulting are equally significant. We have a fifth with 3:2 between F3 and F1, a fourth with 4:3 between N and F3.

Fig. 8. Lute players from Susa, Middle Elamite (ca. 1500 B.C.), Louvre Museum (Sb 7889, Sb 6579, Sb 7910).
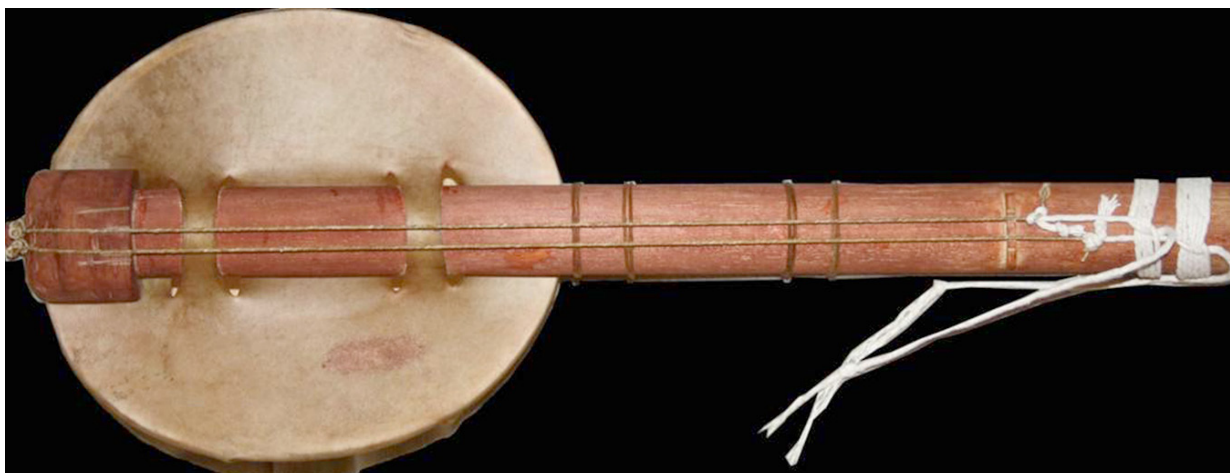
Fig. 9. Replication of the lute.

F1		F2		F3		F4
	9:8		4:3		27:25	

F1		F2		F3		F4
	9:8		4:3		14:13	
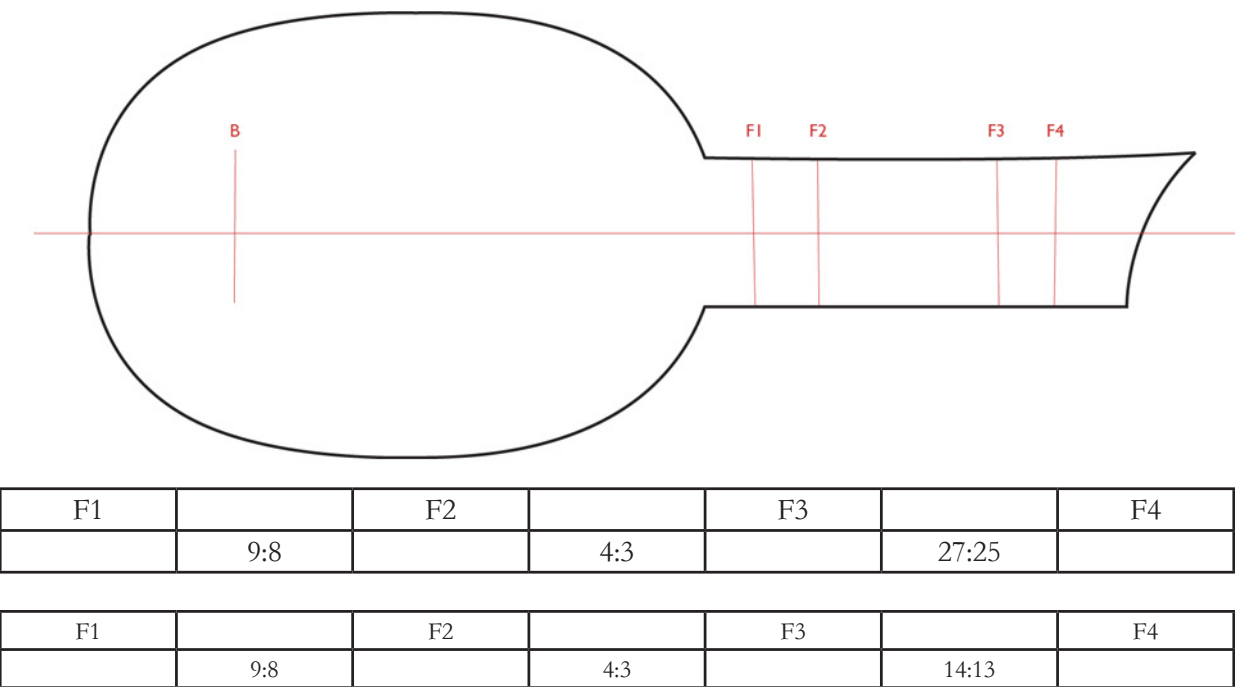
Fig. 10. Design of the lute and ratios between the bridge and each fret, (calculations made from a scale of 1:1, above, and from an unscaled enlargement belox.

F1		F2		F3		F4
	10/9		9/7		41/38	
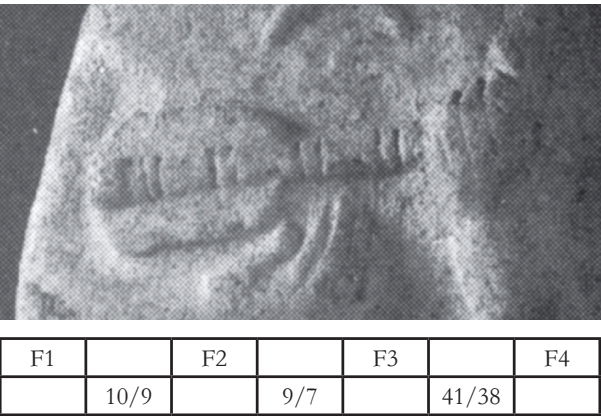
Fig. 11. Detail of figurine M2O and ratios.

Only small adjustments of fret 1 (180 mm instead of 181 mm) and fret 3 (240 mm instead of 237mm) were made to produce a semitone of 16:15.

Therefore pitches extrapolated are G, B, C, F and G, which would coincide with the regular numbers in sexagesimal quantification 36, 45, 48, 64, 72. (fig. 12). Hypothetical intervals are shown on figure 13.

Had the scaling been based on the just fourth, the fifth, and the third it would have produced a very different pattern (figure 14) which would have been obvious on the figurine.

Our reconstruction has generated the following pitches (G, B, C, F, G). This hypothetical scaling is therefore consistent with the regular numbers in sexagesimal quantification with a fourth and a fifth amounting to an octave. We could assume that this scaling gave principal intervals allowing the musician to play other pitches within the fourth and the fifth, and therefore produced a tetrachord with a predominant semitone and a pentachord with a predominant tone.

Conclusion

The replication of a musical instrument from an isolated depiction may seem ambitious to say the least. However, this form of experimentation is essential as it generates new perspectives and raises questions[46]. Many questions, however, remain unanswered with regard materials and other points and will remain so until textual evidence may enlighten us in the future. Fret depiction is a very rare occurrence in the iconography of the Ancient Near-East and our figurine from Susa is even a rare occurrence. It remains that our replication taken from the iconography has produced unexpected results which might enlighten us about a particular Elamite scaling practice during the early second millennium B.C.

Fig. 12. Ratios and quantification
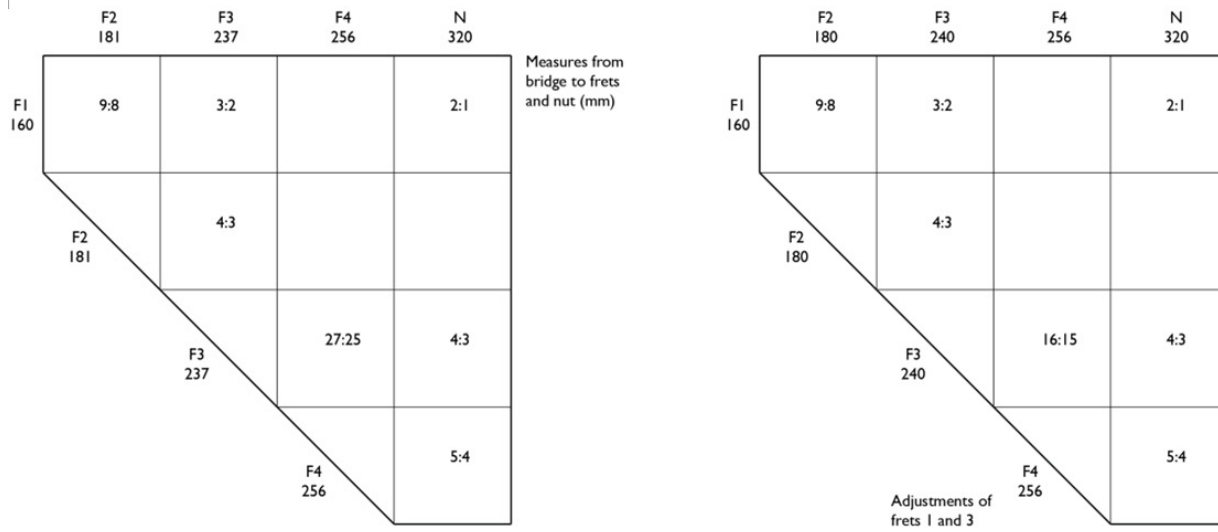
Quantif.	36		45		48		64		72
Pitches	G		B		C		F		G
Ratios		5:4		16:15		4:3		9:8	
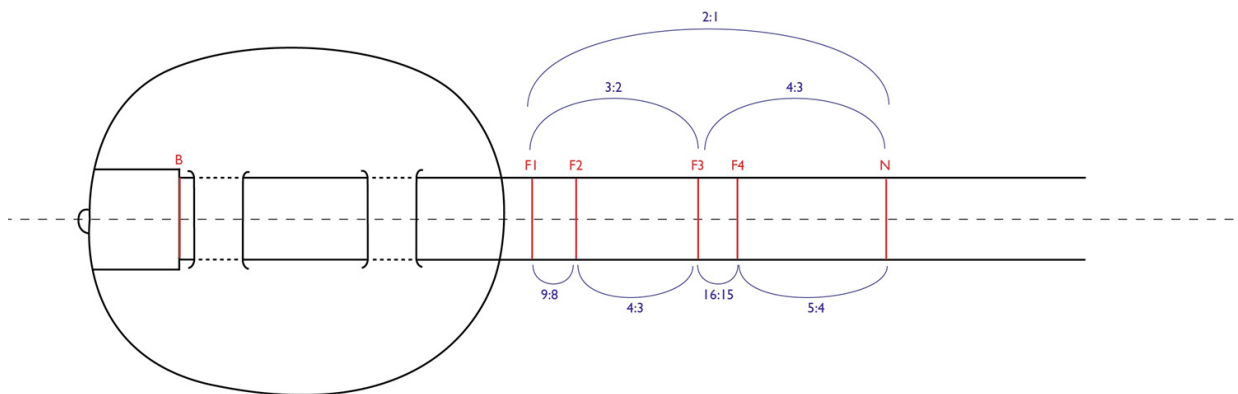
Fig. 13. Hypothetical fretting.
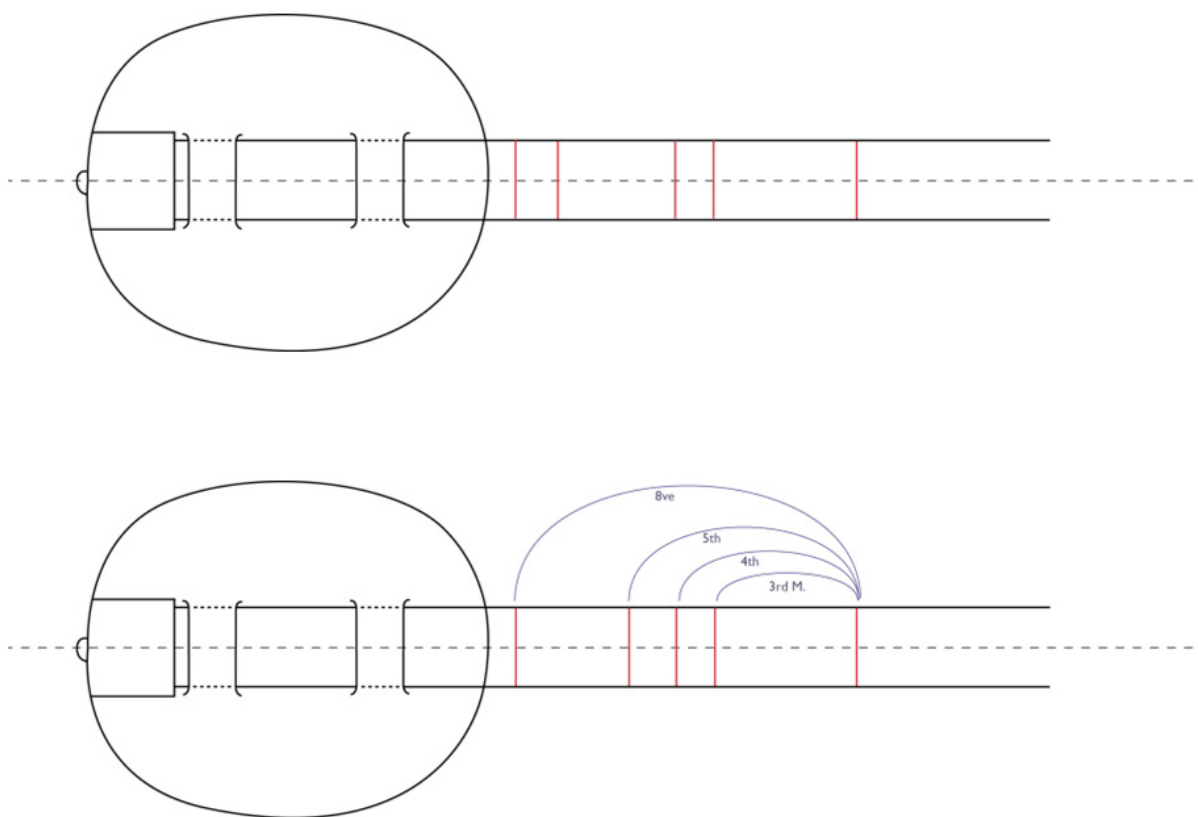
Fig. 14 Hypothetical fretting

Notes

1 Affinities with the Iranian sphere are reflected in materials from Susa, from its foundation, ca. 4200 B.C., to the Warka period, in the middle of the 4th millennium B.C., when Susa was under the influence of its Sumerian neighbours and became the most important city in the region. When the Uruk influence ended in Susa, the city turned back to Iran and integrated the Proto-Elamite culture characterized by unity and its own language. Yet Susa became one of the two most important places in Elam with Anšan, (Tall-i Malyan) well-attested from Sumerian texts of the 3rd millennium. Due to obscure reasons, Proto-Elamite sites collapsed at the same time, *ca.* 2700 B.C. Susa turned again towards a flourishing Mesopotamian ideal, without ending its relationship with Iran, as attested with a particular style in ceramics. In the middle of the 3rd millennium B.C., Susa benefited from an important and strategic position for trading in the Ancient Near East. Susa did not avoid Sargon's expansionism and was annexed to the Akkadian Empire. Although Elamite rulers kept their power, they became vassals, and the Semitic culture settled in Susa, where the Akkadian language, the administrative system and artistic styles were adopted. At the fall of Akkad, Puzur-Inšušinak, prince of Awan, took over Susa, and merged both Mesopotamian and Elamite cultures, in a first attempt at unification. However, Susa

was conquered again by Šulgi and became assimilated within the Neo-Sumerian Empire. Susians seemed to accept the Sumerian domination, as the city blossomed. However, it kept its links with Iran until Idadu the Ist, king of Šimaški and Elam, ended the Neo-Sumerian Empire, already weakened by Amorite incursions. Susa, once again, was brought back to Elamite realm but now strongly an more united than ever. At the dawn of the 2nd millennium B.C., Elam included the plain fo Susa, the Iranian plateau and was ruled by the Šimaški Dynasty. At the end of the XIXth century B.C., King Ebarat (Eparti) called himself 'King of Anšan and Susa'. Later, his title was abandoned and became Sumerian Sukkalmah, 'great regent'. The Sukkalmah dynasty ended during the middle of the 2nd millennium B.C., with the advent of the Igi-Halkid Dynasty, notably with Untaš-Napiriša known for his creation of the new city Dur-Untaš (Choga Zanbil), 40km away from Susa on the road to Anšan. Then, during the XIIth century B.C., Šutruk-Nahhunte and his sons led Elam to its prosperity with Susa as its capital city. The Šutrukide Dynasty fell to Nebuchadnezzar the Ist. Susa was destroyed and reduced to cinder; the plain was deserted, and so was Anšan in Fars. During the next four centuries, the history of Elam remained obscure, but Susa seemed to rise up again from its ashes. Elamite kings dedicated monuments at the end of the VIIIth century B.C. Assurbanipal's sack of Susa, in 646 B.C., put an end to the Elamites. Susa entered Persian History. For further reading, see Amiet,

P., *Suse 6000 ans d' histoire*, Monographies des musées de France, Musée du Louvre, RMN, (Paris, 1988); Amiet, P., *Elam*, Archée Editeur, (Auvers-sur-Oise, 1966); Caubet, A., *La Cité royale de Suse : trésors du Proche-Orient ancien au Louvre*, RMN, (Paris, 1994); Tallon, F., M*étallurgie Susienne I : de la fondation de Suse au XVIIIe s. av. J.-C.*, RMN, (Paris, 1987); Huot, J.-L., *Une archéologie des peuples du Proche-Orient Ancien, I and II,* Editions Errance, (Paris, 2004); Potts, D. T., *The Archaeology of Elam. Formation and Transformation of an Ancient Iranian State,* Cambridge University Press, (Cambridge,1999); De Graef, K. & Tavernier, J. (Eds.), 'Susa and Elam. Archaeological, Philological, Historical and Geographical Perspectives', *Proceedings of the International Congress held at Ghent University*, (Ghent, 2009), pp14-17; *Mémoires de la Délégation en Perse*, (Leiden, 2012).

2 Under the Sukkalmah Dynasty, Susa became a prosperous city. At the beginning of the XVIIIth c.entury B.C., a new district was developed to the north of the Royal City. Humble dwellings were demolished and luxurious aristocratic houses were built in their stead. Potts writes that '[…] under the sukkalmahs, particularly those of the late nineteenth and early eighteenth centuries B.C., the prestige and influence of Elam throughout Western Asia was unprecedented.' Potts, D.T., (1999), p. 160. On Susa under the Sukkalmah Dynasty, see De Graef, K., De 'La dynastie Simaški au Sukkalmahat'. *Les documents fin PEII début PEIII du Chantier B à Suse, Mémoires de la délégation archéologique en Iran*, 55, (Ghent, 2006)

3 *'Avec sa bonne cinquantaine de moules univalves, Suse a livré un nombre beaucoup plus important d'exemplaires que les autres sites anciens du Proche-Orient. La ville a produit une grande abondance de moulages en série et c'est encore une des originalitées de Suse d'avoir utilisé la possibilité de nombreuses copies d'un même thème.'* Spycket, A., 'Les figurines de Suse, I, les figurines humaines, IVe-IIe millénaires avant J.-C.,' *Mémoires de la Délégation Archéologique en Iran, Mission de Susiane, 52,* J. Gabalda, ed, (Paris,1992), p. 233.

4 See Spycket, A., (1992).

5 Louvre Museum

6 Spycket, A., (1992), p. 130.

7 Spycket, A., (1992), p. 130

8 '*Le pendentif circulaire est porté par un acolyte coiffé d'une tiare ovoïde sur une scène de sacrifice peinte dans la cour 102 du palais de Mari. Faut-il en conclure que les personnages à bonnet ovoïde de Suse sont d'origine syrienne ?*' Spycket, A., (1992), p. 130.

9 The Akkadian *ubānu*, Sumerian ŠUSI, is a length measure of a finger and equates approximately to 1,6 cm. CAD, *sub* U and W, vol. 20, pp. 3-9.

10 This figurine was unearthed by Roland de Mecquenem one year earlier before Sb 7805 and was probably made from the same mould. Spycket, A., (1992), M20.

11 Spycket, A., 1992, figures 779 (Sb 8200) and 782 (Sb 7821), (1992), p 132.

12 See Dumbrill, R. J., *The Archaeomusicology of Ancient Near East*, Trafford Publishing, (Victoria, 2005), pp. 308-309.

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26 Unidentified wood. See Postgate, J. N., 'Trees and Timbers in the Assyrian Texts', *Bulletin of Sumerian Archaeology*, VI, (1992), p. 182 ; *CAD*, E, vol. 4, *elammakku*, pp. 75-76.

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31 The musical instrument appears as ti-ki-id-la ŠA$_3$.TAR = ti-ki-it-ta-lu-u, in Arnaud Emar VI, 545:405'. Civil wrote 'The word is thus *tikit(a)lū*, with a likely by-form **tikillū* whose *quasi* homonymy with *tigillū* "gourd" is perhaps accidental since tikitlū sounds very much like onomatopoeia.'

32 Tablets N5260 and N5346+N5726, University of Pennsylvania, Museum of Archaeology and Anthropology (Pictures and transcriptions available on www.cdli.ucla.edu)

33 Veldhuis, N. Ch., *Elementary Education at Nippur. The lists of trees and wooden objects*, Dissertation, (Groningen, 1997), p.165 and p.187.

34 Krispijn, Th. J. H., 'Musical Ensembles in Ancient Mesopotamia', *ICONEA* (London, 2008), p. 148. 'The combination ŠA$_3$.TAR might be interpreted as "Split heart" indicating the fingerboard of a lute crossing the sound-box. […] Since three strings are mentioned, the identification with a lute is more likely.'

35 Dumbrill, R. J., (2005), p.309.

36 *ARM* XXIII, pp. 140-148.

37 Dumbrill, R. J., Glues, hides and guts in Mari Organology during the last Dynasties (1787-1762 B.C.) and under the reigns of Yasmaḫ-Addu and Zimrī-Līm. *ARAM,* (Oxford, 2012) Forthcoming.

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40 See Tallon, F., (Paris, 1987), (mentioned in note 1).

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42 A comparable study has been carried out by Dumbrill on the arched harps from a seal impression (TH 97-35) from Mari, Syria. Dumbrill is questioning the accuracy of the lapicide for a proper metrological study of the musical instruments depicted. See Dumbrill, R. J., 'Appendix' *ICONEA* 2008, (London, 2008), pp 73-75. This paper is an appendix to Marcetteau's, 'A Queen's Orchestra at the court of Mari: New Perspectives on the archaic instrumentarium in the third millennium', pp. 67-73.

43 Ratio 27/25 is a semitone greater than the diatonic semitone and, in addition to 25/24 equates to a 9/8 tone.

44 Ratio 14:13 is roughly between 27:25 and 16:15.

45 Super major third 9:7 differs from 4:3 from a 28:27 ratio.

46 Richard Dumbrill and myself made a replication of an Elamite harp from the Battle of Ulai Relief at the British Museum. Publication forthcoming. In 2009, Richard Dumbrill and Myriam Marcetteau reconstructed the silver lyre of Ur at the British Museum. Forthcoming.

German singer accompanied by lute. Guillaume Caoursin, *De Casu Regis Zysym*. Ulm, 1496

INSTRUMENT AS INSPIRATION: THE IDIOMATIC EXPRESSION OF HANS NEUSIDLER

Jamie Ackers

Introduction

In the late fifteenth century the role of the lute in European music began to change. In earlier times, in keeping with its Middle-Eastern origins, the lute was played with a quill held between thumb and forefinger of the right hand in order to pluck the strings. This technique enabled the lutenist to play melodies, often with rapid scale passages, and pluck adjacent strings together as chords but is limited when it comes to performing polyphony. As a result the lute was most often used in ensemble with various combinations of instruments, or to accompany the voice. Surviving scores from the fifteenth century suggest the combination of lute and gittern was popular, with one performer Pietrobono Bursellis (1417-1497) of Ferrara being widely acclaimed. In Germany (the adopted home of Hans Neusidler) the 'Sprecher', singers of narrative poetry, would frequently accompany themselves with the lute.

With the rise of polyphonic music which began in the fifteenth century the standard lute technique changed. In order to replicate the sound of imitative counterpoint on the lute, performers adapted their right hand technique so that the fingers and thumb of the right hand plucked the strings. This enabled them to play non-adjacent strings and chords in rhythmic unison. At this time they maintained the same hand position resulting in the thumb – under technique, whereby the thumb passes under the index finger travelling into the palm of the hand when the string is struck.

In some of the earliest published works for lute solo there are hints of the old plectrum style of playing. In the example below dated to about from the Lute Book of Vincenzo Capirola (1474 - *circa* 1550), aside from the decorative charm of the publication, the use of rapid scale passages juxtaposed with two-part counterpoint aptly demonstrates the transition between the two styles.

Page from Vincenzo Capirola's 'Lute Book', about 1515.

Hans Neusidler

Hans Neusidler was born in Pressburg in Bohemia, now Bratislava in Slovakia, around 1508. A region of the city was then called Newsiedl, which may give a more specific location to his origins. Nothing is known of his life before he arrived in Nuremberg in 1530, possibly fleeing an invading Turkish army, and established himself there. Town records indicate that Neusidler married and took up citizenship in Nuremberg in 1531 and was esteemed as a lute teacher, performer and lute maker. None of the instruments he made have survived. Neusidler fathered as many as eighteen children by his two wives and a surviving document relates to his appeal to the town council for financial assistance to provide for them. Two of his children became renowned lutenists themselves, Melchior (1530-1590) and Conrad. (1541-c.1603)

Neusidler was a prolific publisher of lute music. Between 1536 and 1544 he produced eight volumes which contain a rich variety of repertoire including arrangements of German and French songs, madrigals, and motets for solo lute; along with Italian and German dances, many with descriptive titles (Der Judentanz, Unser Küchen kan ser wol kochen) and free improvisatory preludes. Neusidlers' first book Ein newgeordnet küenstlich Lautenbuch(1536) has a specifically didactic purpose and contains a detailed lute tutor along with graded pieces aimed at the autodidactic lute student. He was among the first to include fingering instructions and information on rhythm and holding notes, something absent from lute tablature generally. Neusidler's books were printed in German Tablature, in example 2, a system advantageous for early printers but time consuming to learn to read fluently. This has hindered the acceptance of Neusidler's music among contemporary performers.
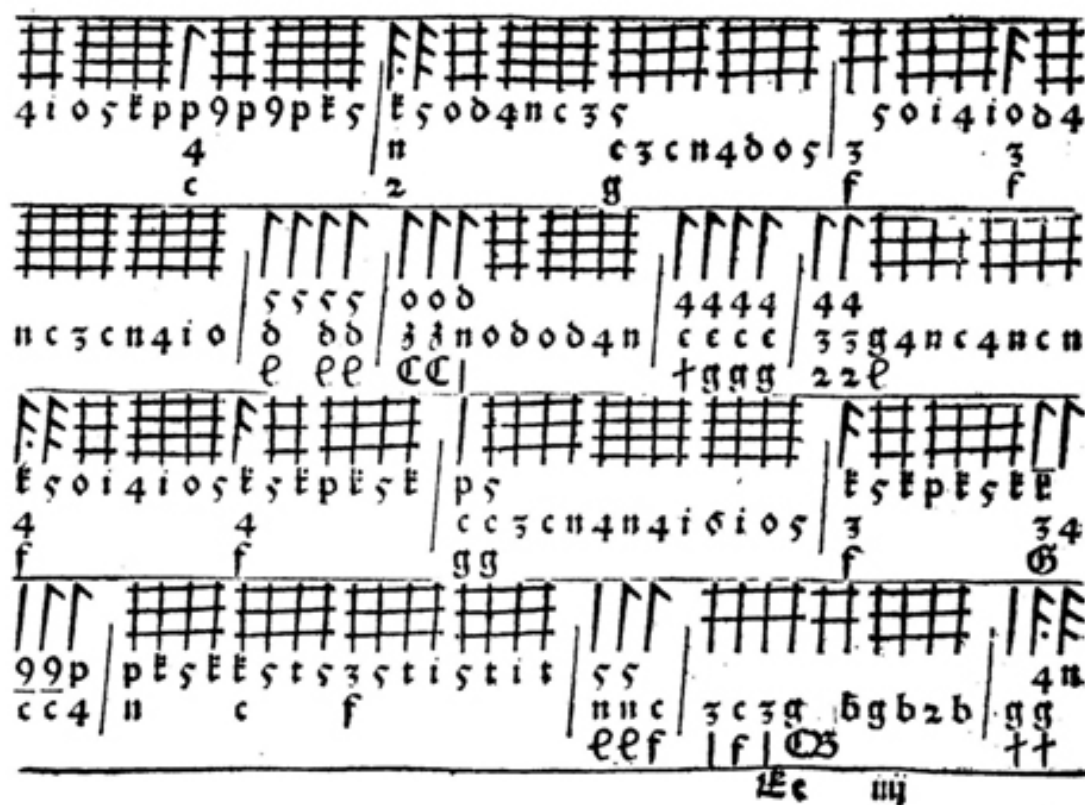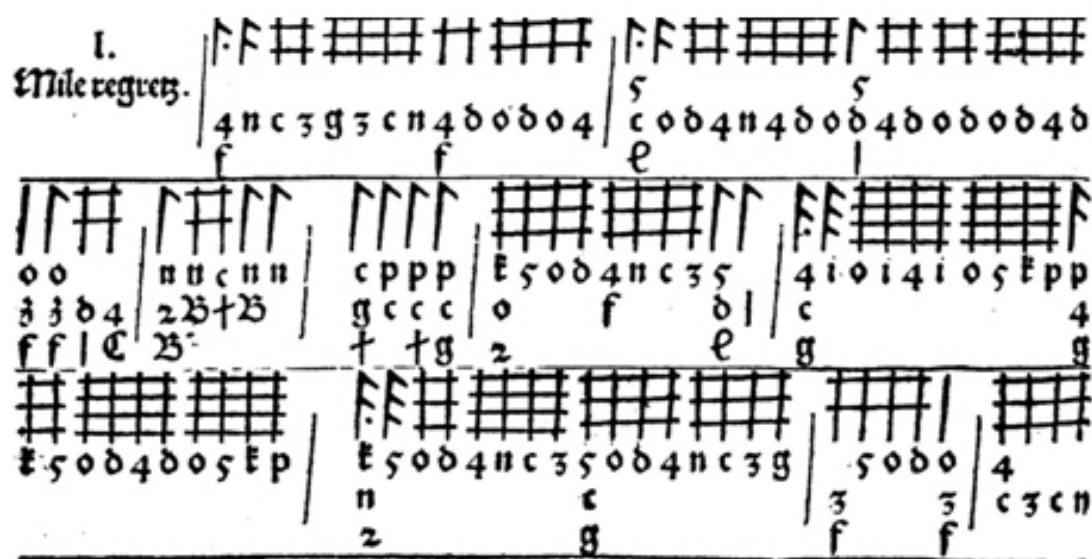
Example 2. German Tablature,

By the early sixteenth century, certain rules of composition were already in place which were to be influential until the twentieth century. Derived from vocal and instrumental part-writing these included avoiding the diminished fifth interval melodically, not writing parallel octaves and perfect fifths between parts, though lines could be and often are doubled at the octave in lute music and other sources; and the use of tonal imitation, where melodic sequences which begin on a different pitch from the original melody have their intervals adapted to fit the key of the piece. Dissonant intervals are only employed in passing on weak beats, or having been prepared by holding a note from a previous harmony to create a suspension. These conventions are much in evidence in compositions by contemporaries of Neusidler, especially the works of Francesco Da Milano (1497-1543) perhaps the most famed lutenist of his day.

In example 3, from a Fantasia by Milano, we see how a skilled lutenist composer adapts the imitative melodic style of vocal polyphony to the lute, giving the impression of multiple entries while the music stays mostly in two parts, except at the cadence. Parallel movement is always in consonant intervals, in this case tenths but alternatively thirds or sixths with only mild dissonance being heard either in the form of melodic passing notes or the prepared suspension at the cadence. This elegant sophisticated composition could easily be adapted for another polyphonic instrument or arranged for ensemble without any of the music's qualities being lost. In the following example from Neusidler, example 4, however, the idiomatic qualities of the music would make it very difficult to adapt to another instrument while maintaining the character of the music.

In this example 4, from Neusidler's Der Gassenhawer (a name for a popular balled), the chords are set with no attention to correct voicing, so when transcribed from the lute tablature to convention notation above, the use of parallel fifths and octaves become obvious. However when played on the lute, these chord voicings give the greatest sonority and warmth of sound as well as being the most technically straightforward to play. The repeated notes, which could begin to sound tedious, are given greater interest by the strong weak effect

of the thumb-under lute technique which gives the down-stroke with the thumb a strong accent and the index finger up-stroke a lighter articulation.

In example 5, from Ein kuntsreicher Preambel oder Fantasey (1536), Neusidler again writes a sequence of parallel fifths which demonstrates that what sounds sonorous and fits neatly on the fingerboard of the lute is often in defiance of the conventional sounds that polyphonic writing was expected to take. If transcribed to a trio of wind instruments these progressions would have been considered to sound weak and unconvincing but on the lute the effect is sonorous and moving.

As well as writing music that shows a harmonic sense, idiomatic to the lute and in contrast to the conventional ideas of the time, Neusidler displays a unique melodic sense, especially in the ornaments he adds to his intabulations of vocal models. In this passage from Neusidlers setting of Josquin DuPrez's famous chanson Mille Regretz, example 6, he adds a chromatic twist to a familiar rhythmic ornament often applied to a cadence in this period that would eventually evolve into the standard cadential trill of the Baroque.

This unique form of the gruppo ornament is found on several occasions in Neusidler's music and while adding piquancy to an otherwise simple melodic line also has a foundation in the layout of the notes on the fingerboard of the lute. To play the conventional E natural, instead of the E sharp, would require an awkward left-hand stretch to the fourth fret of the fifth course of the lute which would risk stopping the held A of the bass. The E sharp however is played as the open fourth course, the same course as the fretted G and F sharp, resulting in a more fluid melodic line, which allows the bass to be held, and avoids a technically difficult stretch. Neusidler's willingness to adapt musical concerns to the possibilities of the instrument here creates a unique and original motif.

In the example 7 from Ein kuntsreicher Preambel oder Fantasey the bass line shows repeated use of the diminished fifth interval in a melodic sense and also harmonically as the foundation of a sequence of chords. As well as the parallel octaves in bar two we see the bass line moving from E flat to A and back to E flat. This upsets the listener's expectations as the implied

Phrygian cadence fails to materialise and eventually the music cadences into C via a suspension.

It could be suggested from these examples that Neusidler, rather than being inventive in his exploration of the possibilities of the lute, was merely poorly educated and was unaware of the conventions of his time, his music being the outpourings of a gifted instinctive instrumentalist. Against this the range of his musical output must be raised and the breadth of composer's works he arranged for lute. Neusidler intabulated works by leading composer from throughout Europe including Josquin, Obrecht, Ghiselin, Isaac and Senfl in some of the most skilful and imaginative lute arrangements of the time. Thus, his knowledge of notated music must have been wide-ranging. In addition, his publication of arrangements of street songs and dance tunes suggest a musician at home with the everyday music-making of the populace. Finally, to illustrate Neusidler's awareness of convention an example from his arrangement of Hofheimer's Nach Willen Dein which, though liberally ornamented, obeys the rules, in example 8.

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Example 3

Example 4

Example 5

Example 6
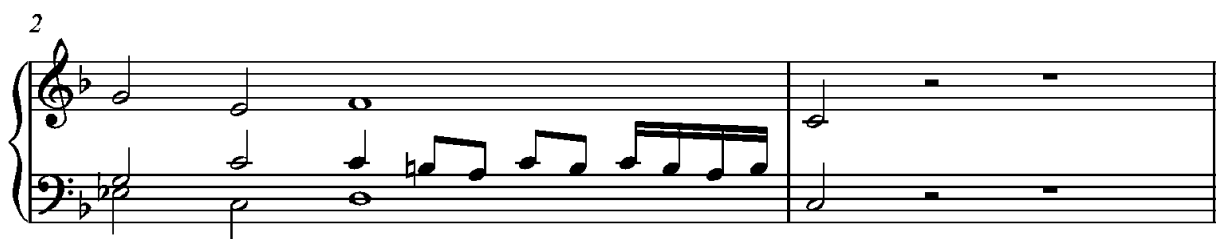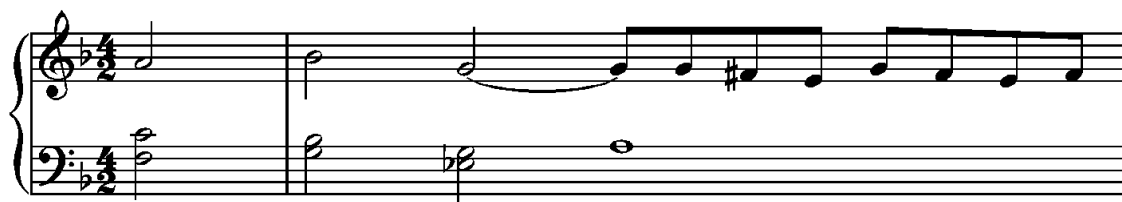
Example,e 7

Example 8

ORGANOLOGY AND PHILOLOGY OF AN URUKEAN LUTE* (?)

Richard Dumbrill

1 Introduction

In 1996 my distinguished colleague and friend Doctor Dominique Collon informed me that the British Museum had acquired a new cylinder seal dating from the Uruk period[1], about 3200 to 3000 B.C. (Fig. 1) Henceforth 'A', on which there would be the depiction of an individual, perhaps a woman on account of the hair style, sitting at the back of a boat and holding a long-necked implement[2]. The device was initially identified as a long-neck lute type, 'LNLT' henceforth, because of later Akkadian representations, from about 2334 to 2193 B.C. (Figs. 2, 2a and 3, 3a)[3] of similar implements which had previously been identified as such.

Collon initially thought that the Uruk implement would also be a long-necked instrument a LNLT, although a soundbox was not clearly delineated[4]. (Fig. 4a) Then my learned friend revised her opinion on the basis that the seal would have been

reworked, certainly in ancient times and though not quite a palimpsest, there were significant alterations to what might have been the original scene, in style as well as in its execution. (Fig. 5) However, Collon remained ambiguous in her statement as she later added that the re-cutting was probably recent as were the various scratch-marks on the surface of the soft stone. She added that she did not believe that the seal was an outright forgery and that everything indicated that the re-working of the underlying worn shapes was made around 3100 B.C. It was not really clear what Collon meant by 'recent'. If she considered 3100 B.C. as being 'recent' in the Uruk Period, or if the 'recent' at the beginning of her statement addressed to modern times.

Consequently the dating of the object became unsafe. There was also another critical argument which advanced that the implement might have been a paddle and not an instrument although the hand positions and the general posture of the musician did not fit in with the usual paddling posture.

Unscientifically, I had wishfully imagined the outlines of a hypothetical round sound-box which Yumiko Higano drew on my request (Fig. 4c) but I must confess that at that time I relied on the flimsy evidence from other seals with elusive LNPT instruments played by either bow-legged children or bow-legged dwarfs, a bit like fashionable 'air-guitar playing'. (Figs. 6, a, b, c, d, e and f) During the ICONEA 2011 conference Ricardo Eichmann objected to my hypothesis and disagreed with my views on the implement both with dating and representation. However I remained certain that long-necked plucked-string instruments would have existed at the Uruk period, and even before.

This paper will defend my postulation that the depiction on the seal is probably that of a stringed instrument on grounds of iconography, organology and philology. Furthermore, it is my contention that the location of the instrument in the organological chain of instrumental evolution would logically place it during the fourth millennium.

2 Organological morphology of stringed instruments

Firstly, the organological characteristics of these instruments must be clearly defined. There are two principal types of stringed instruments.

Harps and lyres types are mono-polyheterochord instruments while lute types can be polytonal-monoheterochord or polytonal poly-heterochord instruments. This means that while harps and lyres usually have many strings the nature of which being of a different matter from its body (heterochord), and are therefore polyheterochord instruments, as each of their strings produce only one pitch. Therefore they are mono(tonal) types of polyheterochord instruments.

Lute types are instruments where the string (in monoheterochord instruments) or strings (in polyheterochord instruments) produce more than one pitch [poly(tonal)]. This is the consequence of the 'stopping' or of what is wrongly termed the 'fretting' of a string[5]. This is done by pressing (stopping, fretting) the string at a given point, with the finger (or with other devices), against a straight and flat, sometimes slightly curved, surface of the instrument called the finger-board, or fret-board which runs along and under the length of the string. Whereas lyres are mostly trapezoidal in shape; harps are all triangular and lutes oblong with (or without) added sound-boxes or resonators, developing in size with time, becoming very large with the Arabian Mediaeval 'ūd, forerunner of the Renaissance and Baroque lutes. However, another instrument type, the tube-zither, well-known to ethomusicologists has been ignored by all scholars having written about the seal under scrutiny, and others.

3 Comparative Organology

If most of my colleagues who are in doubt that the implement depicted in 'A' is a LNLT on the basis that there is no visible sound-box, then I would suggest that they have another look at figure 2a, 'B'. (Fig. 2a) There is no sound-box to be seen. However, there is an inscription which is a rare occurrence. It reads **UR.UR/nar** meaning '(Mr.) Urur, singer'. This does not help in identifying the instrument he is playing. Mr. Urur's depiction and name seem to have been added to a previously engraved seal bought 'off the shelf'. The identification of a LNLT 'B' on figure 2a was made on the basis that the depiction on figure 3 and 3a, 'C' shows some kind of horse-shoe shape which would be, most probably, a sound-box. On this seal, the musician is certainly part of the original composition unlike

with Mr. Urur's. Had we not found 'C', then it would have been impossible to say if 'B' represented a LNLT. Thus its identification as a LNLT rests uniquely on the positive identification in 'C'.

Therefore we have a subjectivist dilemma. While some feel quite satisfied that the instrument in 'B' is a LNLT, even if there is no evidence of sound-box, but that at the same time reject the hypothesis that 'A' could be a LNLT because it has no sound-box, is bewildering. Their arguments are as follows: a) Because there are no other occurrences of a LNLT during the Uruk period, therefore the implement cannot be one. b) Because the individual in 'A' is sitting at the back of a boat, it is more likely that she/he is handling a paddle rather than a LNLT. c) Because there is no evidence of a sound-box, it cannot be a LNLT.

There is not much logic in all of this as it is not necessarily a typical LNLT that is represented either in 'A' or in 'B'. On the other hand, it is highly probable that 'C' is a LNLT. If the implement depicted in 'A' and 'B' are not LNLTs, what could they be. Are they musical implements at all? We may assume that if 'B' identifies a musician because he is probably holding an instrument.

It is my contention that we have been misguided in expecting that a LNLT should necessarily be fitted with a sound-box.

The tube-zither might have been the ancestor of the instrument, especially at Uruk where canes abound. They are hollow, and their cavity would have constituted the soundbox of the instrument which therefore did not need a dedicated typical hemispherical sound-box or resonator placed at its lower end. There is another organological parallel with early Uruk harps. They too were mono-structural as there is no organological distinction between sound-boxes and yokes (Fig. 7a, b, c and d) and in many ways, tube-zithers, (Fig. 8) from which stemmed the LNLT are similar since both are made up of a hollow structure; both have plucked strings with their frequency amplified by similar hollow mono-structures.

The major difference, besides one being curved, the other straight, is that with harps, strings 'pull out' the soundboard in extraction while with LNLTs, string vibrations are transmitted to the hollow structure by means of a bridge by

compression of the soundboard. (Fig. 9a, and b)

4) What would an Uruk tube-zither look like?

The simplest form of tube-zither would consist of a cane, probably *arundo donax*, cut to an appropriate size, about 60 centimetres long with a diameter of about 2 centimetres. A string of gut, vegetal or animal hair fibre would be stretched from one end to the other and attached with a knot inserted into a thin slit, at each end. An archaic form of bridge would be placed where suitable and would add tension to the string. In the course of evolution the bridge would have been inserted into a carved groove. (Fig. 10) This probably happened when musicians became urban dwellers and needed to be in tune with one another. The longer the speaking length of the string, the smaller would have been the intervals, in a comfortable finger position. (Fig.12) It is very probable that earlier instruments were short or that the bridge was placed near the middle of the instrument to allow for larger intervals with a suitable finger position. The ideal speaking length would be about 30 centimetres as this would allow for playing a fourth, a fifth and smaller tone and semitone intervals.

During the early Uruk Period, or the Protohistoric Chalcolithic, the concept of sound-boxes, or resonators as amplification devices was unknow[6]. Therefore their absence on tube-zithers is no more surprising than their absence on harps which at that time were mono-structural and probably monoxylous. With regard early Uruk lyres, which appear to have sound-boxes, as there is no evidence that they were hollowed-out, I contend that they were a later development of the LNLT. I further contend that they were the consequence of both zoomorphic/totemistic and structural causes. With time and in respect of the materials used for its construction, luthiers, much later, realised that there was a relationship between volume and timbre.

Some would argue that the early tube-zither would have had little sound volume. My own experimentation proves that to the contrary, it would have been as loud as 18th century clavichords, J.S. Bach's favourite instruments.

5) Sumerian **gù.di** *and Chinese gŭdí?*

Reductio ad absurdum, a common form of argument which seeks to demonstrate that a statement is true by showing that a false, untenable, or absurd result follows from its denial, or in turn to demonstrate that a statement is false by showing that a false, untenable, or absurd result follows from its acceptance.

During the ICONEA 2011 conference, I apposed Sumerian **(giš) gù.di/dé** = Akkadian *inu,* to Chinese gŭdí, meaning 'bone-flute' which is the oldest known musical instrument from Jiahu in China[7], dating back to around 6000 B.C. (Fig. 12) The word for bone is 'ku', a determinative, and the substantive for flute is 'di'. Stuck together they ended up as the word 'gŭdí'.

Irving Finkel immediately questioned my sanity as indeed any relation between them is absurd. Or is it?

For most of my career I have advocated that Neanderthalian and later holed pipe flutes could not have played any predetermined scale on the basis of absence of numeracy. Indeed I wrote and taught that without ratios, the calculation of hole positions was impossible. Neanderthalians, later Cro-Magnons, Jiahu Chinese and others might have drilled holes on their pipes but the scales produced would have been aleatory. With my own hypothesis of the tube-zither, I have proved myself wrong.

The position of the fingers on the tube-zither string define the position of holes on the pipe flute. (Fig. 13) However, the precision of pitches for the last two holes, at the treble depends on the height of the bridge, as the higher it is the greater the tension on the string when pressed onto the fingerboard and therefore the greater the pitch deviation. The four first holes produce a filled fifth, a reasonable span for that period. The pipe was cut at the level of the bridge since this is what defined its speaking length. This is where the pipe was blown. Obviously the flute would not have been tuned at the same pitch as the tube-zither but most importantly, the interval ratios would have been the same in both instruments. Then the tube-zither might have been tuned to the pipe, as the pipe could not be tuned to the zither. The problem was solved. This explanation might provide an explanation, never explored before, on how the earliest pipe flutes such as the Jiahu models might have been drilled and produced coherent and predetermined scales. Therefore it can be hypothesized that tube-zithers might have been much older than initially

thought. None survived because cane decays fast. On the other hand, bone of which pipes were made, much more resistant to erosion, would account for their discovery at various sites[8].

After all, Sumerian **gù.di** and Chinese gǔdí have a lot in common!

6) Philology

There has been many attempts at sourcing the LNLTs. Stauder thought Highland foreigners[9] brought them to Mesopotamia. There were many other propositions arising mainly from the iconography. However, many other instruments have not survived the erosion of time, and others were represented only later in the course of history, such as the LNLTs, when they became worthy of depiction and inscription, having reached, perhaps, temple, palatial or urban status at a level which needs to be appreciated. Copulation was even depicted in their context.

It is only recently that philologists[10] have surmised that Sumerian **giš.gù.di**, Akkadian *inu*, are words to equate with the LNLT[11]. The Chicago Assyrian Dictionary gives *inu*[12] as 'talking, or noise-producing stick or wood'.

A series of lexical texts[13] mentions stringed instruments divided into two sections. In the first part[14] we have numerous names of different types of harps, lyres, sound-boxes of percussion instruments and their various pieces. The second part[15] has wooden objects which can be described as functional poles and sticks, with special items at one or both ends such as crutches, goads, stocks and staffs. It includes the Sumerian **giš.gù.di**, or **giš.gù.dé**. Another list[16] has Sumerian words of the **giš.gù.di** family connected with the LNLT and related to both its structure and playing.

An unpublished fragment[17] gives *inu* as **giš.sa.3** implying that this instrument was fitted with three strings. With regards to line 132 the number does not, obviously, refer to an instrument with 30 strings but rather to their speaking length. This variation would probably have indicated that this lute had strings of a speaking length of 30 *ubanātu*, which is about 50 cm. One lexical text[18] has the entry: **GIŠ gi-eš-gu-da GÙ-DÉ** = *inu* which heads a list of musical terms preceding the Akkadian verb *zamaru* 'to sing' and in another[19], **GIŠ gù-di**

and **GIŠ dù-a** are mentioned along with 89 other organological theoretic words[20]. Another list[21] has: **mu.gù.dé = giš.gù.dé** = *inu.*

Ḫḫ VIIB 117-134

117	**giš.gù.dè**		
118	**giš.SAR**		
119	**giš.ù.lú.DU/ša₄**	= *inu*	'song-maker'
120	**giš.gaba.gub**	= *inu*	'breast-stander'
121	**giš.šu.galam.ma**		'hand-descending'
122	**giš.sa.šu**	= *inu*	'covered/fretted-string'
123	**giš.ùr**	= *inu*	'leg'
124	**giš.u₅**	= *inu*	'rider'
125	**giš.i.nu**		'to revere the statue'(?)
126	**giš.dù.a**		'knowledge'(?)
127	**giš.dím**		'for creation'(?)
128a	**giš.dim**		**DIM** *risku* ligature/fret'(?)
128b	**giš.bal**		'royal seal'(?)
128c	**giš.á.gá**		'side-placed'(?)
129a	**giš.tún**		'deep/bass'(?)
129b	**giš.sikil**		'clear'
130	**giš.gal**		'large'
131	**giš.šu.gal**		'big hand'
132	**giš.gal.30.àm**		'30 big'
133	**giš.gù.dé.ša.u₁₈ša₄**		**sausa** sound. Plucked'?
134	**giš.gù.dé.ša.u₁₈ša₄ gú-gar.ra**		'shoulder-placed-plucked'(?)

The term is also present in another[22] as: *pi-it-nu [ta-p]a-lu, [x-x]-xlu,[i]-nu.* But the Sumerian column is broken. Another[23] has **giš.gù.dé tag.tag.[ga.zu]**: (text *gan)-nu lap-tu-ka* which translates as: 'when you pluck the *inu*' and another[24] has: **giš.bal.ki.š.r.ra mu**(var.**mi**)**.ni.in.gar**: *ina-an adi[ša]-ri iškum.*

The oldest text mentioning the **giš.gù.di** is the Gudea Cylinder A VI4 where Shulgi ruler of Ur, 2094-2047 B.C., in the self-laudatory Hymn B[25], writes:

'I, Shulgi, the king of Ur, dedicated myself also to music; nothing related to it was too complex for me. I penetrated the depth and width of the consummate musical training of the **tigi** and **adab** compositions. The **šu-kár** instrument, to appease the heart in anger, and in their preparation I did not bungle anything; by pondering and striving I succeeded in fixing their rules. I learnt the sweetness of the string thirty[26] instrument and to the **zàmí**, the 3-string instrument and the essence (heart) of the musical craft, the great **šà-ša₄**, the **algar**, the *sabîtum* (which) are of the ruler's rite, I taught the herald their fingering. I taught/knew how to pluck the strings of the *mirîtum*. The **Urzababa** instrument, the *ḫarḫar*, the *zanarû*. The 'Big Dog', the **giš-dìm**, that give sounds like (the cries of) the boatmen. A son of a musician, with a pure hand, made (them) for me. The **gù-di** instrument that had never been played (before by me), when it was . . . brought to me, Of that very instrument I divined its secret, I was able to set in order as something that had ever been in my hand; whether to loosen or to fix the strings on it did not escape (the ability of) my hand.'

The Akkadian word *inu* is much isolated. We do not trace it in any other Semitic language and it seems that it was known only under its Sumerian equation of **giš.gù.di**. On the other hand it is possible to see some similarity with the Sanskrit/Hindi *vînâ*, which is a long-necked and fretted lute equipped with a resonator as would have been the case with the earliest form of the instrument from Mesopotamia.

Al-Farabi mentions an instrument, the Arabian *šarūdh* which we find in India under the name of *sarod*, as the favourite of the Arabs. It was the invention of a certain *Hulays Ibn al-Ahwas* who lived in the mountains around Samarkand. According to *Fārābī*, the instrument was invented in the country of *Maḫ* in the year 1228 of the Alexandrine era, that is the year 306 of the Muslim Arabs. There is a drawing in a copy of the manuscript but it makes no sense. Vüllers' Persico-Latinum Lexicon defines the *šarūdh* as the 'King of the rud', that is the best of the instruments of the 'rud' family. The word *'rud'* comes from the Sanskrit *'rudrī'* [27] which means 'stringed instrument' and shares some homophony with Sumerian **gù.di**.

The word spreads on the one hand via the Indo-European medium into the Spanish *'rota';* French *'rotte';* Welsh *'crwth'*, etc., and on the other, via the Semitic medium, into Arabic *''ūd';* Ugaritic *''d';*.[28] Spanish *'laúd';* German *'Laute';* French *'luth'* and so forth. The long-necked lute type in the OED is orthographed as *tambura; tambora; tamera; tumboora; tambur(a)* and *tanpoora*. We have an Arabic *ṭunbur;* Persian *tanbur;* Armenian *pandir;* Georgian *panturi* and a Serbo-Croat *tamburitza*.

The Greeks called it *pandura; panduros; phanduros; panduris* or *pandurion*. The Latin is *pandura*. It is attested as a Nubian instrument in the third century B.C. The earliest literary allusion to lute types in Greece comes from Anaxilas in his play The Lyre-maker as *'trichordos'* which is the Sumerian **giš.sa.3** = *pitnu šelaštī*[29]. According to Pollux, the trichordon was Assyrian and they gave it the name *'pandoura'* [30]. There is here some homophony with **b/pan.tur**, where Sumerian **giš b/pan** equates to Akkadian *qaštu (tilpanu)* = (wood)-'bow' and Sumerian **'tur'** equating to Akkadian *seḫeru* = 'small'. This is further reflected in Georgian where *tar, thir* and *tul*, also mean 'small'.

That the **gù.di** found its origins in the **ban.tur** may be hypothesised from the etymology of both terms. On the one hand, the small arched-harp, **ban.tur** which may have kept the name after the straightening of its neck, eventually led to *pandura* and, on the other, the gù.di led to either the '*rotte; rota; crwth'* or to the *''ūd'; 'd; luth; lute; laute* and *laúd'*.

7) Conclusion

The implement pictured on the Uruk cylinder, should we agree that it is indeed from that period, would have been a forerunner of the long neck lute type, a tube-zither. I would say that the term tube-zither is not quite appropriate to describe the instrument under scrutiny. Since it has been common practice, for the last century, at least, to call some of these intruments long-neck lutes, I would like to propose that the item on the Uruk cylinder should be called a 'tube-lute'-type, mainly for the reason that characteristic tube-zithers have had their own evolution, independently from the lute-type instruments and have therefore been segregated from their earliest occurrence.

Illustrations

Fig.1. BM141632 'A'. Author's photograph. With kind permission of the Trustees of the British Museum. (2010)

Fig. 2.BM 89096 'B'. Author's photograph. With kind permission of the Trustees of the British Museum. (2010)

Fig. 3. BM 28806 'C'. Author's photograph. With kind permission of the Trustees of the British Museum. (2010)

Fig. 2a. 'B', after Kilmer/Collon. (1980)

Fig. 3a. 'C', after Kilmer/Collon. (1980)

Figs. 4a, b, c and d. Figure a is the original. In b, which is Collon's drawing, the stick is twisted and the round part is interpreted as the musician's posterior. In c, Higano/Dumbrill 1998 version, the interpretation is false. In d, the author assumes that the lapicide did not complete his depiction and completes in with dotted lines. From BM 141632.
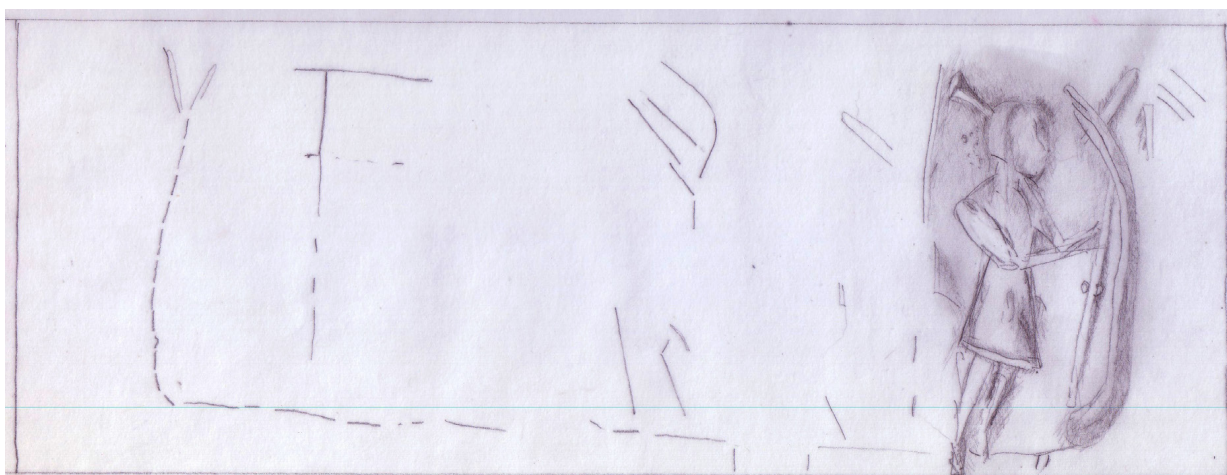
Fig. 5. Authors drawing of the traces of a previous carving of the cylindre BM 141632.
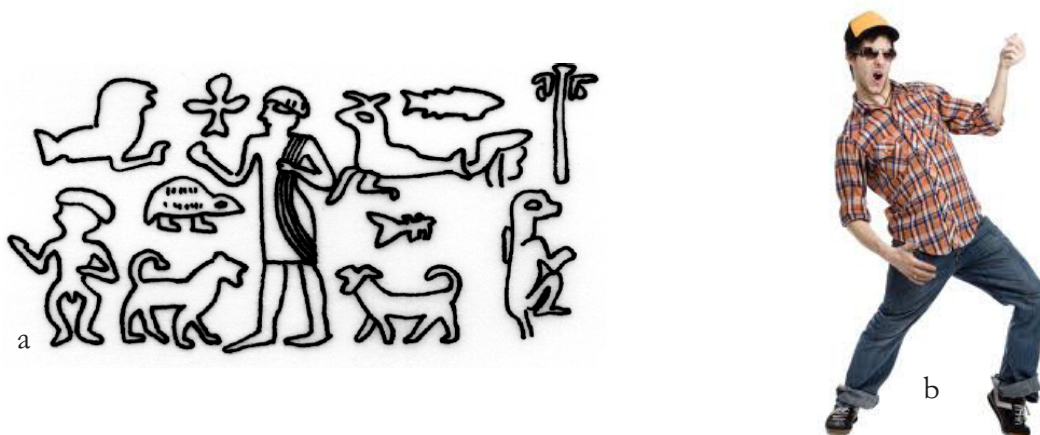
Fig. 6, a and b. Impression from black calcite seal cylinder, and detail. Iran. 2000 - 1500 B.C., (Speelers, 1943, p.138 and Collon, 1987/154. and d, modern air guitarist.

Fig. 6. c, Impression from lapis lazuli seal cylinder, and detail Isin/Larsa. 1500 - 1000 BC, (Speelers, 1943, p.138 and Collon, 1987/154. and d, modern air guitarist.

Fig. 6. e, impression from lapis lazuli seal cylinder, and detail Isin/Larsa. 2000 - 1500 B.C., BM86269. and f, modern air guitarist.

Fig. 7. a, Uruk period pictograph. 3200 - 3000 B.C.
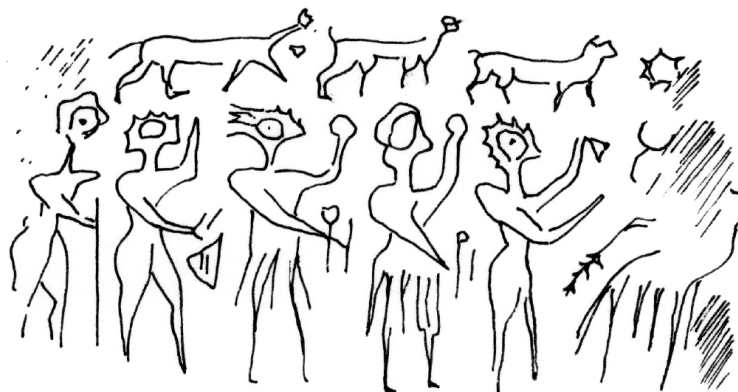
Fig. 7. b, From a seal impression from the Royal Cemetery at Ur, Iraq. 3000 - 2200 B.C. (Amiet 1770)
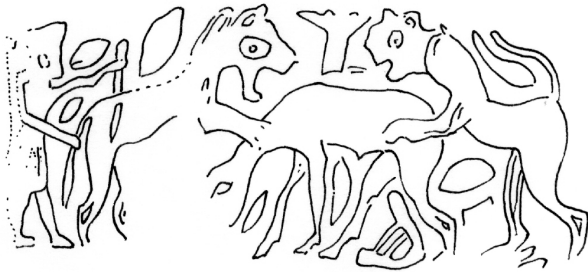
Fig. 7. c, Impression from seal cylinder. Nippur, the Temple of Inanna. 3000 - 2200 B.C.

Fig. 7. d, Impression from seal cylinder. Ur, Iraq. 3000 - 2200 B.C. (Legrain 1936/169; Collon 1987/4)

Fig. 8. a, Valiha, Malagasy bamboo tube zither, modern

Fig. 7. f, Stone stele and detail. Khafajeh, Iraq. 3000 - 2200. (Frankfort 1954/33a; Woolley I, Pl. 182; De Gruyter CT2.)

Fig. 8. b, Group of Valihas, Malagasy bamboo tube zithers, modern

Fig. 9a. With the harp, the strings pull out the soundboard in extraction. From the author's collection.
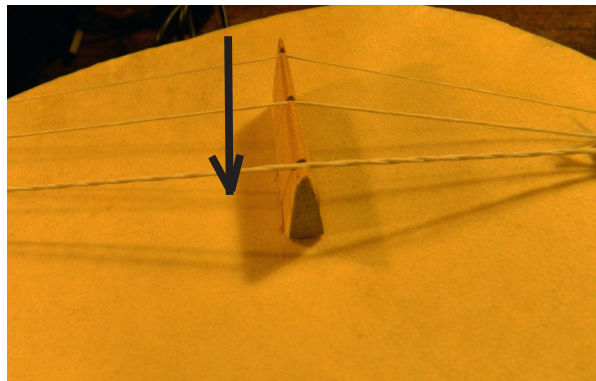
Fig. 9b. With the lute types and LNLTs, the strings push in the soundboard in pression. From the author's collection.

a

b

c
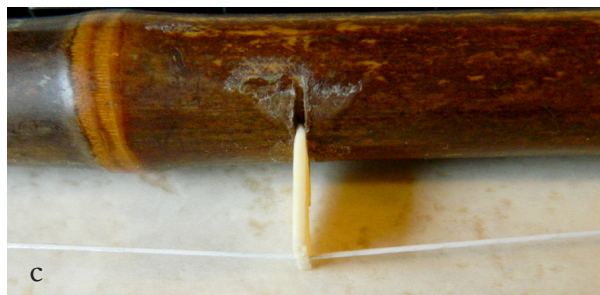
Fig. 10a, General view of the tube-zither; b, attachment of the string at one end of the tube-zither. The other end is similarly attached; c, fixed bridge on the tube-zither.

Fig. 11. Finger positions on the tube-zither. Here the fingers give tone with the index finger, tone with the major, semitone with the annular and fifth with the auricular.

Fig. 12. Neolithic bone flute. Henan Provincial Museum.

Fig. 13. Note that the finger positions on the tube-zither, generating an approximate diatonic scale, equate to the position of the holes drilled in the tin-whistle and that the labium of the whistle which defines the speaking length of the whistle is also in alignment with bridge of the tube-zither which also defines the speaking length of the string with which it is fitted.

References

1 Collon, D., 'Lute or paddle', In Monumentum Marcelle Duchesne-Guillemin, *Acta Iranica 34*, (Peeters, 1999), pp. 477-484. There, Collon writes that *'...the seal is made of a dark grey, almost black stone which is lighter where the surface has been worked or damaged. It is relatively squat in size (2.55 x 2.1 cm) with a perforation drilled from both ends, with slightly flaring extremities and a diameter of about 0.55 cm. It bears an incised design which, in its present form, is crudely executed but this is due to recutting of a worn original. This recutting is probably recent as are the various scratch marks on the surface of the soft stone. Although it could be argued that the seal is an outright forgery, I do not believe this to be the case and everything indicates the recutting of worn pecked shapes made with a different tool around 3100 BC. The design is very close to that on a cylinder seal from the 'Sammelfund' at Uruk (Heinrich, 1936, pl. 17a) which probably also dates to around 3100 BC. The Uruk seal (Moortgat, 1940, no. 30: Amiet, 1980, no. 655; Collon. 1987, no. 897) is made of lapis lazuli and measures 4.3 x 3.5 cm; it is therefore larger but it has precisely the same proportions as the British Museum seal.'*

2 It is with the greatest caution that the identification of an item should be taken as often subjective interpretations distort author's minds where each sees the object with which they are familiar. For instance a musicologist might find stringed instruments whenever vertical lines are drawn; they might be bars of a cage or the linear decoration of a pot. A weaving specialist would find vertical looms whenever vertical lines are depicted, etc. This is why before any definite - if anything can ever be definite in this field - identification can be indubitably established. I shall use general terms such as 'implement' and whenever a stringed instrument cannot be differentiated from another, I will use 'stringed-instrument'. It is a regrettable habit of most archaeologists and other historians of naming long, or short-necked plucked instruments 'lutes' as the word 'lute' addresses to a specific type of long, or short-necked plucked instruments. These identifications remain, even in authoritative and often revised works such as the Sachs-Hornbostel classification for they say that the strings of the lyre are attached to a yoke which lies in the same plane as the soundboard and consists of two arms and a cross-bar, and of the harp that the plane of their strings lies perpendicular to the soundboard surface. While not inexact, *per se*, it misses the point that the distinction between them is the method of soundboard excitation. With lyres and lutes the strings excite the soundboard by compression, as the strings press on the soundboard by means of a bridge, while with harp types the soundboard is excited by means of extraction, the soundboard being pulled out by the tension of the strings. These two radically different means of soundboard excitation are obvious upon hearing each instrument.

3 Collon, D., Draffkorn Kilmer, A., 'The Lute in Ancient Mesopotamia', *Music and Civilisation*, The British Museum Yearbook 4, Mitchell, T.C., Ed. Published for the Trustees of the British Museum by British Museum Publications Ltd., (London, 1980), pp. 13-28.

4 There is evidence of a round, if not hemispherical, or spherical structure placed under the wooden stick. Initially,

I assumed that it might have been the representation of the crouched musician's right knee. However, three-quarters depictions had not yet entered into the artistic mind at that time and would only appear during the Classical Greek period. Therefore this rounded thing could well have been a soundbox hanging below at the lower extremity of the stick as is also see on some tube-zithers. Collon sees there the posterior of the musician. See figures 4a, b, c and d.

5 Fret (n.) 'ornamental interlaced pattern,' late 14c., from Old French frete 'interlaced work, trellis work,' probably from Frankish 'fetur' or another Germanic source (cf. Old English fetor, Old High German feggara 'fetter') perhaps from notion of 'decorative anklet', or of materials 'bound' together. The other noun, 'ridge on the fingerboard of a guitar,' is c.1500 of unknown origin but possibly another sense of Old French 'frete'. (http://www.etymonline.com/index.php?allowed_in_frame=0&search=fret&searchmode=phrase).

This clearly means that in organological terms there must be a distinction between a fret which is inlaid onto the fingerboard surface, and a ligature which is raised, physically, on the fingerboard, usually with twisted gut wound around the neck of the instrument and knotted at the back or at the side.

6 Resonators and sound-boxes are different in their function and structure. The primitive musical bow illustrated below is an example of resonator where the sound generated by the string which is stretched by the flexibility of the bow with gather into the empty calabash for resonance. (Author's collection)

A sound-box as depicted below, from a bottle-gourd 'lute' shows that a membrane made of lamb hide has been stretched onto the opening of the gourd. There the membrane acts as amplifier and combines with the volume of the gourd for resonance. With this instrument the lack of opening on the membrane prevents the efficient contribution of resonance. These opening will develop in the first millennium B.C. (Author's collection.)

7 Jiahu was the site of a Neolithic Yellow River settlement based in the central plains of ancient China, modern Wuyang, Henan Province. Archaeologists consider the site to be one of the earliest examples of the Peiligang culture. Settled from 7000 to 5800 B.C., the site was later flooded and abandoned. The settlement was surrounded by a moat and covered an area of 55,000 square metres. Discovered by Zhu Zhi in 1962, extensive excavation of the site did not occur until much later. Most of the site still has not been excavated. The average size of the bone flute is approximately 20 cm long and 1.1 cm in diameter, and the bone flutes are made from the wings of the red-crowned crane. These open-ended bone flutes have a variety of number of holes, ranging from one to seven holes; however there are some with eight holes, seven in front and one in back. The bone whistles are much shorter with lengths from 5.7 cm to 10.5 cm long with only a couple of holes. The number of holes and the spacing of the holes depended on what pitch the flute was supposed to make. Lee and Shen believed that the Chinese understood the 'resonance of an air column' and were able to create an instrument that contained their 'complete interval preference of Chinese music'. Blowing into an end-blown bone flutes produces the same effect as blowing into a glass bottle. It was also believed that the eight open holes flute could play 'all harmonic intervals and two registers'. These harmonic intervals are said to be a 'function of culture' and were of a larger set compared to the West. Bone flutes were also used for sacrificial purposes as well as bird hunting. Gudi are not very common now, but there are still people who continue to use these flutes for their music. See Chang, Lulu Huang, 'From Confucius to Kublai Khan', *The Institute of Mediaeval Music,* (Canada, 1993), pp. 2-7; Lee, Yuan-Yuan and Sin-Yan Shen, 'Chinese Musical Instruments', *Chinese Music Society of North America,* (Chicago, 1999), pp. 63-6; Shen, Sin-Yan, 'China, A Journey into Its Musical Art', *Chinese Music Society of North America,* (Chicago, 2000), pp. 107-8; So, Jenny F. ed. 'Music in the Age of Confucius', *Freer Gallery of Art and Arthur M Sackler Gallery,* (Washington, D.C., 2000), 88-90; Wu, Ben, Archaeology and History of Musical Instrument in China. *The Garland Encyclopedia of World Music East Asia: China, Japan, and Korea.* Vol. 7. Ed Robert C. Province, Yosihiko Tokumaru, and J Laurence Witzleban. (New York, Routledge, 2002), 105-6; Zhang, JuZhong, Garman Harboolt, Changsui Wang, and ZhaoChen Kong, 'Oldest playable musical instrument found at Jiahu early Neolithic site in China,' *Nature,* 23 September 1999.

8 http://www.flutopedia.com/dev_flutes_euroasia.htm

9 Stauder, W., 'Zur Frühgeschichte der Laute' *Festschrift Helmut Osthoff* (Tutsing, 1961), p. 15ff.

10 Landberger, B., MSL 4, 21; Römer, W. H. P., *Sumerischen 'Königshymnen' der Isin-Zeit,* p. 197; Collon/Kilmer, in opus cit., p. 15 ff.

11 Sumerian gù-dé, Akkadian *nagāgu,* 'to roar, bray'; *sagāmu* 'to cry out'. Literally 'shouting-head'.

12 CAD I 151f. *inu* A.

13 Ḫḫ

14 VII B 38-116: MSL 6, 118-125.

15 VII B 117-185: MSL 6, 125-129.

16 Ḫḫ VIIB 117-134.

17 Ḫḫ VII B.

18 *AfO* 7, 273, *erimḫus*III, 93

19 Proto-Lù.

20 MSL 12, 56:639 f.

21 Emesal vocabulary II, 152.

22 Antagal D, 178ff.

23 Langdon's Oxford editions of Cuneiform Texts.

24 Lugale VIII, 23.

25 Thureau-Dangin SAK (Leipzig, 1907), p. 96f.; SAHG, (Zürich and Stuttgart, 1953), p. 144.

26 Castellino, 'Two Shulgi Hymns' (B and C), Atudi Semitici, Vol. 42, (Rome, 1972), pp. 47-9, II pp. 155-72.

27 In a verbal communication Gérard Huet told me that the Sanskrit word 'rudri' (fem.) is an abbreviation of 'rudravInA', that is 'vinA' of 'rudra'. Monier-Williams defines it as a stringed instrument, 'sorte de luth ou de guitare'. See Daniélou, *L'Inde du Nord* (Buchet/Chastel, 1966).

28 In *Šachar* and *Šalim,* l. 12 as *šb'd.yrgm.'l.*'d = seven times to be recited to the accompaniment of the 'lute'?; Gordon, C.H., *Ugaritic Literature* (1949), p.59; Driver, G.R., *Canaanite Myths and Legends* (Edinburg, 1956), p. 120f., and Caquot, A., *Textes Ougaritiques* I(1974), pp. 370 f. and n.1.

29 MSL VI, 124, In Ḫḫ VII B Gap a, line b.

30 West, M.L., *Ancient Greek Music* (Oxford, 1992), p. 80, fn. 144.

TWO COMMON ERRORS ABOUT THE PROPORTIONS OF THE 'ŪD:

Ibn a-ṭ-Ṭaḥḥān and al-Kindī [1]

Amine Beyhom

Introduction

The *'ūd* and the *ṭunbūr* are generically called 'lutes' in archaeomusicology. This leads to persistent misunderstandings about the origins of both instruments. They are, as far as we know, distinct in their origins as well as in their organology. They should be referred to as 'lute-types', for reasons that I shall give below. Whenever the term 'lute' is used in the context of archaeomusicology, it implies that it is a 'lute-type'[2]. The terms are used to distinguish chordophones where each string generates more than one pitch, when stopped with a finger on the neck of the instrument, from instruments where one string generates only one pitch, such as harps, lyres, and the like.

Other errors are frequently encountered in the literature and are generally the result of a lack of methodology, of philology, or simply of musicological, or (and mostly) of musical and practical knowledge. Other reasons are ideological. It has been common, in the last two centuries, to bring all back to Pythagoras as the source of scientific evidence for ancient music. This school of thought, even if it has produced multiple generations of musicologists, does not satisfy the epistemology of an objective and independent scholar.

On the other hand, the *'ūd* as we know it in its current form since the eleventh century, due to various, principally ideological considerations, has been the catalyst of most of the organological errors and arbitrary postulations[3].

In the present paper, we shall explore mainly two obvious errors about the instrument. The first one being Farmer's description of *a-ṭ-Ṭaḥḥān's* 'archlute', of great importance because it reveals the careless attitude of Orientalist musicology towards scientific truth. The second is Poché's so-called hemispherical body of *al-Kindī's 'ūd*. Both errors are extremely misleading especially because of their wide repute in the literature[4].

Ibn a-ṭ-Ṭaḥḥān's [5] *archlute according to Farmer*

In 1939, Henry George Farmer [6] described an archlute which would have been 180 cm tall. It would have been designed by *Abū-l-Ḥassan ibn a-ṭ-Ṭaḥḥān,* a musician from Fatimid Egypt. In 1979, Curtis Bouterse[7] corrected Farmer's assumption on the basis of logic. *A-ṭ-Ṭaḥḥān's* lute was brought back to a more reasonable size, closer to modern proportions. However, the misinterpretation persisted for forty years during which musicologists were amazed at the size of this instrument, without disputing Farmer's description. In the first part of this article, the proportions of the instrument, and the philological evidence will be discussed.

A-ṭ-Ṭaḥḥān's description of the 'ūd

A-ṭ-Ṭaḥḥān's explanations and Farmer's interpretation are given below:

'The dimension of the lute should be as follows: its length should be 180 cm. (= 40 *aṣābi' maḍmūma*). Its width should be 72 cm. (= 16 *aṣābi' maḍmūma*). Its depth should be 27 cm. (= 12 *aṣābi' maḍmūma*). The bridge-tailpiece(sic) should be placed at about 4½ cm. (= 2 *aṣābi'* odd) [from the bottom]. The neck should be 29.25 cm long. (= 1 *shibr* + 1 *'aqd* in length). The pegbox should be 29.25 cm. The pegs should be eight unless there is a *zīr ḥādd* string when there will be ten strings, but this is not known in our times[8].'

The Arabic text in the *IfGAI* edition is[9]:

ص. 172، مخطوط ص. 87ظ:

فأمَّا كميّته فيحتاج أن يكون طوله أربعون اصبعًا بالأصابع
المضمومة وعرضه ستة عشر اصبعًا[10] بالأصابع
المضمومة أيضًا وعمقه اثني عشر اصبعًا وتركيب[11] المشط
منه على اصبعين وكسر وتقدير عنقه[12] الذي يركّب عليه
شبر واحد وعقد ويكون طول بنجكه شبر وعقد وعدد ملاويه
ثمانية فإن كان له زير حادّ فعشرة وإن كان ذلك لا يُعرف
في زماننا هذا

If we take the *iṣbaʿ* as basic unit of measurement, equating to about the thickness of a finger of 2.25 cm, the *(iṣbaʿ) maḍmūm,* according to Farmer would equate to two fingers, that is 4.5 cm. The *shibr* would be 12 fingers therefore 27 cm.

The linguistic and organological problem which arises comes from the meaning of *iṣbaʿ maḍmūm.* The verb *ḍamma* means 'to join', *maḍmūm,* or *munḍamm* meaning 'joined' or 'tightened'. However, a finger cannot be joined to itself even if two or more of them can be pressed one against the other[13]. If we go back to the measurements given above we note that the terms used are *aṣābiʿ maḍmūma,* the plural of (one) *iṣbaʿ maḍmūm*[14] which was also used by Farmer in the same article[15]. This expression is also found in an equivalent formulation as *aṣābiʿ munḍamma* in al-Kindī's (epistle) *Risāla fī-l-Luḥūn wa-n-Nagham,* an incomplete version commented by Farmer. Al-Kindī says:[16] '...to start with, the *ʿūd* must be 36 *iṣbaʿan munḍamma* - thick fingers! This would amount to three *ashbār'*[17].

In this quotation, *iṣbaʿan* is a flexion of the word *iṣbaʿ* when it follows a number, here 36. We can therefore agree that the *shibr* is equal to 12 'joined fingers' and that *munḍam[ma]* joined to *iṣbaʿan* or *aṣābiʿ* means 'joined without gaps'... to differentiate this unit of measurement form the *shibr* where the fingers are separated.[18]

Additionally, the *ʿaqd* is a particular Arabian value which in context equates to a 'unit' (1) or to 'tens' (10)[19] which would correspond, in the first meaning of the term to Farmer's interpretation where he writes that (1 *shibr* + 1 *ʿaqd* = 13 fingers).

Having corrected Farmer's figures to a formulation proportional to the total length L of the instrument, we have two possible measurements whether the length of the pegbox is included or excluded in its total length[20].

Should we subtract the pegbox from the total length, *Ṭaḥḥān's* measurements would be:

1. Total length without pegbox = 27 fingers = L
2. Total width = 16 fingers = $16L/27$
3. Total depth = 12 fingers = $12L/27$
4. Neck = 13 fingers = $13L/27$
5. Saddlebridge position: at about 2 fingers = $L/16$ from the bottom.
6. Length of the pegbox = 13 fingers = $13L/32$
7. Length of the soundbox = 14 fingers = $7L/16$
8. Total speaking length, more or less 25 fingers = $25L/27$
9. Speaking length above soundboard = 12 fingers = $12L/27$
10. Soundbox: width/length = $16/14 = 8/7$; depth/width = $3/4$

The proportions of the soundbox would be such that in this case, the width would be greater than the length, and therefore *Ṭaḥḥān's ʿūd* would be more like a *ṭunbūr* the speaking length of which, above the neck, (13 fingers) would be longer than the speaking length above the soundboard (12 fingers). Therefore this hypothesis is to be rejected.

Should the pegbox length be added to the total length L (without pegbox), *Ṭaḥḥān's ʿūd* proportions would then be (Fig. 1):

1. Total length without pegbox = 40 fingers = L
2. Total width = 16 fingers = $2L/5$
3. Total depth = 12 fingers = $3L/10$
4. Neck = 13 fingers = $13L/40$
5. Position of the bridge: About 2 fingers (+) = $L/20$ from the bottom
6. Total speaking length = 38 fingers = $19L/20$
7. Length of the soundbox = 27 fingers = $27L/40$ with more or less $2L/3$
8. Total speaking length, above soundboard = more or less 25 fingers = $5L/8$
9. Soundbox: width/length = $16/27$; depth/width = $3/4$
10. Length of pegbox = 13 fingers = $13L/40$ (additionally)

These figures having been corrected, the size of Farmer's 'mega-*ʿūd'* has been reduced to more acceptable proportions with a maximal length

of 90 cm, a width of 36 cm a depth of 27 cm with the bridge placed at 4.5 cm from the lower extremity[21] and a neck 30 cm long. Since we are aware that Farmer's estimation of the finger was oversized and that anthropometric measurements would have increased during the past centuries, it would appear reasonable to 'guess-timate' an average finger at 2 cm which would bring back *Ṭaḥḥān's* '*ūd* measurements as follows:

1. Total length: 80 cm

2. Total width: 32 cm

3. Total depth: 24 cm

4. Neck: 26 cm

5. Position of the bridge at approximately 4.5 cm from the lower end of the instrument

6. Total speaking length: approximately 75.5cm

7. Speaking length above soundboard: approx. 49.5cm

8. Pegbox: 26 cm

Since we know that both ancient and modern '*ūds* are described[22] as having speaking lengths approximately three times the length of the neck, (the junction of the neck and the soundbox equating to a just fifth, that is a third of the speaking length, measured from the nut) *Ṭaḥḥān's* measurements bring up a problem. Indeed, if the total length in the previous table excludes the pegbox, the speaking length measured above the neck (26 cm), is almost an exact third of the whole speaking length ($75.5/3 = 25.17$).

Should we rely on Farmer's initial proportions, the problem is increased since the neck measures $\{(29,25/[180-4,5]) = 0,1666666...\}$ of the speaking length. This would reduce each string span (over the neck) by a wide tone and a half (342 cents to be precise) and would be in opposition to all Arabian anterior and posterior descriptions of the '*ūd* (and of its neck). Proportions being corrected, should the pegbox be included in the total length, the soundbox and the neck would only amount to 54 cm with a total speaking length equal to 49.5 cm, of which over one half (26 cm) would be the speaking length of the string above the neck. This would almost describe a *ṭunbūr*[23] rather than an '*ūd*.

Notwithstanding, therefore, that the bridge would be greatly displaced towards the lower part of the instrument and that the speaking length of the string, above the neck would

measure slightly more than a third of the whole speaking length. Thus it would appear that a comparison between the '*ūds* described by *Ṭaḥḥān* and *Kāmil al-Khulaʿī's* (Figs. 2 and 3), a musician and author living in the early part of the twentieth century, that the instrument would have almost acquired its definitive proportions quite early and that evolutions would have been restricted, up to now, only with regard its classical versions.

The 'archlute' in *Kanz a-t-Tuḥaf*

It will be instructive to compare *Ṭaḥḥān's* '*ūd* to a second description of an 'archlute' given by Farmer in the same article [p. 48]. Thankfully, Farmer's proportions of the '*ūd* in the *Kanz a-t-Tuḥaf* are in their almost original figures[25]:

'As for the dimensions of the lute the length should be 162 cm. (= 36 *angusht*[26] *munḍam*), the width 33.75 cm. (= 15 *angusht*), and the depth 16.875 cm. (= 7½ *angusht*). The measurement of the bridge-tailpiece(sic) should be 13.5 cm. (= 6 *angusht*) […] The length of the neck should be a quarter of the length of the lute … '[27].

These proportions after corrections and the hypothesis that the bridge would have been placed where it meets with the strings (first hypothesis), would agree with figure 4:

1. Total length = 36 fingers = L

2. Total width = 15 fingers = $5L/12$

3. Total depth = 7.5 fingers = $5L/24$

4. Length of the soundbox = 27 fingers = $3L/4$

5. Neck = $L/4$ (9 fingers)

6. Position of the bridge: 6 fingers away from the lower end = $L/6$

7. Total speaking length = 30 fingers = $5L/6$

8. Speaking length above the soundboard = 21 fingers = $7L/12$

9. Soundbox width/length = $15/27 = 5/9$; Depth/width = $1/2$

Here again, proper units of measurement must be integrated in which case the '*ūd* described in the *Kanz a-t-Tuḥaf* would have had the following:

1. Total length: 72 cm

2. Total width: 30 cm

3. Depth of soundbox: 15 cm

4. Position of the bridge: at 12 cm from the bottom

5. Speaking length: 72 - 12 = 60 cm

6. Length of the neck: 18 cm

For a second hypothesis, it would suffice

that the distance to the bridge be measured from the lower end of the instrument and that its width would be of 3 fingers (which is organologically possible, although improbable) so that the ratio between the neck and the speaking length of the string would be 1:3. In this case with a bridge of 3 fingers in width, the base of which placed at 6 fingers from the lower end of the instrument, would give the following (Fig. 5):

1. Total length = 36 fingers= L
2. Total width = 15 fingers = $5L/12$
3. Total depth = 7.5 fingers = $5L/24$
4. Neck = $L/4$ (9 fingers)
5. Soundbox length = 27 fingers = $3L/4$
6. Junction of the strings with the bridge at 9 fingers from the lower end of the instrument = $L/4$ from the lower end (second hypothesis)
7. Total speaking length = 27 fingers = $3L/4$
8. Speaking length above the soundboard = 18 fingers = $L/2$
9. Soundbox: width/length = $15/27$ = $5/9$; depth/width = $1/2$

These proportions are closer to *Kindī's ʿūd* as we shall demonstrate in the second part of this paper with, however, an overgrown bridge displaced towards the nut[29].

We shall come back to this description after having read *Kindī's ūd* proportions in the *New Grove* description and according to the original Arabic text. Our first conclusions will have proven that 1) all proportions of these ancient *ūds* are close enough to the modern instrument, with a well-rounded soundbox, and 2) that the least which can be said is that Farmer has completely ignored coherence in his argumentation[30].

Al-Kindī's hemispherical soundbox *ʿūd:*
Christian Poché's *New Grove* description

We were astonished as we read the *New Grove* article[31] about the *ʿūd*. Its author mentioned an *ʿūd* with an hemispherical soundbox which would have been described by *Kindī* in the ninth century[32]. Having just completed an in-depth re-reading of all the available writings of *Kindī*, Poché's postulation appeared to us as strange with potentially considerable consequences on early theory, and praxis. I quote:

'The body has evolved considerably from the original pear shape (which is perpetuated in our own time with the *qanbūs*, taking on a swelling, rounded form). A spherical shape may even have been envisaged: *al-Kindī* (9th century) described the body of the lute as a ball divided in two.'

We must admit that this description appeared rather puzzling. For our own research, we had come to the conclusion that the measures given by *Kindī* were coherent and corresponded to the usual shape of the instrument, as we know it today. Furthermore, Poché insists that the *ʿūd* would have evolved from a pear-shaped instrument since about 1920, and adds:

'The Syrian *Nahhāt* [should be written "*Naḥḥāt*"] dynasty, originally from Greece, settled in Damascus at the end of the 19th century, and signed their instruments with the name of *Ikhwān Nahhāt* (the *Nahhāt* brothers). The first generation was active in the 1920s and consisted of four brothers, *Hannā* [should be written "*Ḥannā*"], *Antūn* [should be written "*Anṭūn*"], *Rūfān* and *ʿAbduh Nahhāt*; the second generation comprised *Hannā's* two sons *Tawfīq* and *Jurjī*, and the dynasty came to an end with *Tawfīq's* death in 1946. The *Nahhāt* family, who worked on a small scale as craftsmen, not on the industrial scale usual today, transformed the *ʿūd* by giving it its pear shape (*ʿūd ijjās*, or in dialect *ʿūd njās*), and produced extraordinary instruments through their research into the sonority of wood.'

It was therefore most interesting to come back to the aforementioned description as well as that given by the *Ikhwān a-ṣ-Ṣafā'*, which are both quoted in Poché's article in which he says, literally, that the proportions described by the latter were 'harmonious[35]', and in which is given the hypothesis that the *ʿūd* might have evolved from a pear shape, at the dawn of its Arabian history, and then adopted an hemispheric soundbox to end-up with 'harmonious' proportions towards the tenth century (with the *Ikhwān a-ṣ-Ṣafā'*) and then turned back to a (half) pear-shaped, exclusively from the twentieth century.

Al-Kindī's original description and explanations

Looking back at *Kindī's* epistles compiled by *Yūsuf*[36], which he later re-edited[37], and further cross-examining it with the *Risāla fī Khubr Ṣināʿat a-t-Taʾlīf*, edited and commented by *Shawqī*[38], we have found the following detyailled description in the *Risāla fī-l-Luḥūn wa-n-Nagham*, (which in the *New Grove* is only vaguely reproduced):

'[and the] length [of the *'ūd*] will be: thirty-six joint fingers - with good thick fingers - and the total will amount to three *ashbār*[39]. And its width: fifteen fingers. And its depth seven and a half fingers. And the measurement of the width of the bridge with the remainder behind: six fingers. Remains the length of the strings: thirty fingers and on these strings take place the division and the partition, because it is the sounding [or "the speaking"] length. This is why the width must be [of] fifteen fingers as it is the half of this length. Similarly for the depth, seven fingers and a half and this is the half of the width and the quarter of the length [of the strings]. And the neck must be one third of the length [of the speaking strings] and it is: ten fingers. Remains the vibrating body: twenty fingers. And that the back (soundbox) be well rounded and its "thinning" *(khart)*[40] [must be done] towards the neck, as if it had been a round body drawn with a compass which was cut in two in order to extract two *'ūds*[41].'

Kindī adds complementary information further below in his text (see also figure 15):

'Then they adopted *(ṣayyarū)* the ratio which is after the third [of the length of the strings] - and it is the half - for the width and it is the largest width it must be, and its position on the *'ūd* must be three fingers away from the end of the bridge in the direction of the [following the *ilā mā yalī*] strings [width of the bridge = 3 - 7,5 + 6 = 1.5 fingers] - (see figure 15), and the reason for this [is] that it is placed along ['bi-muḥādhāt' = at the proximity of] the place where the strings are plucked, and this because this emplacement [on the *'ūd*] is the widest and the most perfectly sounding, and with regard the plucking of the strings, it is at three fingers from the [front of the] bridge [6 + 3 = 9 fingers from the bottom] because it is the position of one of the parts of the strings and it is its tenth[42].'

A 'vibrating body' (the speaking length of the string above the soundboard) with length of 20 fingers corresponds to a soundbox 26 fingers long. With a width of 15 fingers, it will show that it is difficult to visualize this soundbox as being hemispherical. Here, *Kindī* is accurate in his description and insists on the fact that 'the back should be well-rounded' and must be 'thinned down' *(khart)* towards the neck to make a smooth junction with it. To resume, *Kindī's 'ūd* proportions in this epistle are as follows: (fractions are given in relation to the total length *L):*

1. Total length: 36 fingers = L
2. Total width: 15 fingers = $10L/24 = 5L/12$
3. Total depth: 7.5 fingers = $5L/24$
4. Length: 10 fingers = $5L/18$
5. Soundbox length: 26 fingers = $13L/18$
6. Position of the bridge: 6 fingers from the lower end

= $4L/24 = L/6$
7. Total speaking length: 30 fingers = $20L/24 = 5L/6$
8. Speaking length above soundboard: 20 fingers = $5L/9$
9. Optimal plucking point (from the lower end): 9 fingers = $L/4$
10. Soundbox: width/length = 15/26, or around 3/5; depth/width = 1/2

Should the aforementioned description rightly suggests a soundbox with a hemispherical *base*, it proves that this box resembles contemporary instruments and that *Kindī's* dimensions distanced themselves from the 'harmonious proportions[43]' of the *'ūd* described, according to Poché, in his citation of the *Ikhwān a-ṣ-Ṣafā:*

'The length must be one and a half time the width; the depth, half the width; the neck, one quarter of the length[44].'

This description is short and so is the Arabic version we have in our possession which equally gives brief indications[45]. As for *Kindī's 'ūd*, the hypothesis of an hemispherical soundbox is simply absurd. If indeed the depth of the *end of the bridge in the direction of* is really 7.5 fingers, it is obvious that the length of the soundbox must be, if it were hemispherical, equal to the width (diameter) that is the double (15 fingers) of that depth (radius), which contradicts *Kindī's* indications who clearly stated that the length of the soundboard which equals to the (total) length of the instrument, minus the length of the neck, is equal to 26 'fingers'. Figure 6 has a drawing of *Kindī's 'ūd* according to his descriptions. The line which links the hemisphere which constitutes the soundbox (to the left in the drawing) to the neck can have a more or less elongated shape[46], the maximal width will be found at the height of the centre of the hemisphere inscribed in the box, and the maximal depth, at the vertical of the centre.

Regarding the description of the *'ūd* given in the *Ikhwān a-ṣ-Ṣafā* (drawn to scale in figure 7, with the hypothesis of a rounded soundboard towards the neck), the proportions are:

1. Total length = L
2. Total width = $2L/3$
3. Total depth = $L/3$
4. Neck = $L/4$
5. Soundbox length = $3L/4$
6. Position and size of the bridge are not given.
7. Total speaking length, speaking length above the soundboard, etc., dimensions not given.
8. Soundbox: width/length = 8/9; depth/width = 1/2

Comparing both diagrams, we can derive that:

1. The *ʿūd* in the *Ikhwān a-ṣ-Ṣafāʾ* is structurally comparable to *Kindī's* and circumscribes a sphere the radius of which would be equal to its depth.
2. *Kindī's* description is very detailed, especially if compared to that in the *Ikhwān a-ṣ-Ṣafāʾ*.
3. The aesthetic formulations regarding the 'harmonious' proportions of the *Ikhwān a-ṣ-Ṣafāʾ ʿūd* are decidedly relative.

It is now possible to note that the *ʿūd* in the *Kanz a-t-Tuḥaf* (Fig. 4 and Fig. 5) is quite similar to *Kindī's ʿūd*[48], apart from the neck which is slightly smaller (9 fingers instead of 10). However this could be the consequence of the lack of precision in the bridge position *(mushṭ)* and that its width is far too large and deported towards the nut with regard the version in figure 5[49]. The ratios of the soundbox (depth/width = 1/2) show that the principle described by *Kindī,* about a hemisphere inscribed in the box is equally possible with this instrument.

Discussion

In his article on *ʿūd*-making, Neubauer proposes a synthesis[50] of the proportions given by various Arabian authors of the past. The following section will be based on his findings.

Neubauer's understanding on *Kindī's ʿūd* proportions

Neubauer starts[51] from his observations on the proportions of the *ʿūd* from early descriptions, and particularly with those given by the *Ikhwān a-ṣ-Ṣafāʾ*. These are based on proportions of '1:2:3' between the depth, the width and the length as defined in the documents investigated[52]. Neubauer notes that the proportions given in the *Kanz a-t-Tuḥaf* manuscript are similar[53], since the *Ikhwān* write that 'the neck (Hals) of the *ʿūd* [equates] to a quarter of its length[54].' Neubauer interprets these indications differently from the method that we have chosen in the aforementioned section dedicated to *Kindī's* hemispherical soundbox *ʿūd,* where it is clearly said that the neck of the *ʿūd,* as we agree, must be equal to a quarter of the total length of the instrument (soundbox and neck included from the lower part of the box to the nut[55]); the first of the Arabic editions *(Bustānī)* from the *Ikhwān a-ṣ-Ṣafāʾ* writes that:

'The specialists of this art have said: for the instrument called *ʿūd,* take some wood the length, width and thickness of which must be in the noble proportions *[sharīfa]* and which is that its length is as its width and as its half, and its depth [is] as half of its width, and the neck of the *ʿūd* is [equal to] a quarter of the length [...][56].'

However, this citation does not mention that 'the (first) length of the *ʿūd'* is in fact the length of the (sound)box, while it is the total length of the instrument that is meant at the end of the citation (which is mentioned by many scholars). Therefore the width *l* of the *ʿūd* would be equivalent to two thirds of the *total length L* (since the length is 'as the width and as its half' - $l = 2L/3$), and the depth *P* would be a third of the total length ('its depth [is] as half of its width' - $P = L/3$); The length of the neck *M*, which should be included in the total length, would be equal to its fourth ($L/4$). Should we consider the depth *P* as the unit of measure of these proportions (instead of the total length *L* that we had chosen for unit in our revision), the other dimensions would be expressed by $L = 3P$, $l = 2P$ and the length of the neck $M = 3P/4$ (three quarters of the depth) - these proportions are those given in figure 7, and give proportions of 1:2:3 for the relation between $P/l/L$, since the total depth of the *ʿūd* (which is equal to the depth of the box) is half the total width of the *ʿūd* (which is also the width of the box) and the third of its total length (which is not the length of the box as in the extract above). The length of the neck would be in a relation of 3/4 to the depth (as indicated above), and 1/4 of the total length of the instrument, which would satisfactorily complement the *tetraktys.*

However, Neubauer has chosen, in the article in question[57], another interpretation which refers to *Kindī's* description (given above in the section about him), in 'muscular' fingers to give the *soundbox* of the *ʿūd* of the Brethren of Purity (or *Ikhwān a-ṣ-Ṣafāʾ*) the ratios of 1/2/3, with $P = 1(P)$, $l = 2(P)$ and $L(\text{box}) = 3(P)$ and the length of the neck always equals to a quarter of the total length of the instrument (Fig. 8).

Therefore the total length of the instrument would become:

$L = L_{(box)} + M_{(neck)} = L_{(box)} + L_{(total)}/4$, hence $L = 4L_{(box)}/3$ and $M = P$.

This interpretation has completely changed the previous figures and would imply modifications in our deductions which would lead to the following corrections:

1. Total length = $L = 4L_{(box)}/3 = 4P$

2. Total width (same as that of the box) = $L/2 = 2P$

3. Total depth (same as that of the box) = $L/4 = P$

4. Neck = $L/4 = P$

5. Length of the soundbox = $3L/4 = 3P$

6. Position of the bridge: unknown

7. Total speaking length, speaking length above soundboard, etc.: unknown.

8. Soundbox: width/length = 2/3; depth/width = 1/2

It would seem obvious that the general shape of the *ʿūd* seems closer to contemporary instruments and especially to *Kindī's* as corrected above, but raises an organologic problem with the size of the neck and with the speaking length of the string. We have noted that the *Ikhwān a-ṣ-Ṣafā'* did not give indications about the positioning of the bridge or for the speaking length of the string, hence our hesitation in figures 7 and 8. Estimating that the speaking length on the neck must be between the fourth (minimum) and the fifth, (maximum, as generally observed), we can attempt at determining, at least the position of the bridge. Should the neck of the *ʿūd* of the *Ikhwān a-ṣ-Ṣafā'* in Neubauer's interpretation correspond exactly to the fourth, which equates to a quarter of the speaking length, the bridge should be (attached) at the base of the box (left on figure 9) and the total speaking length should be equal to the total length of the *ʿūd*.

Should the length of the neck be such that the speaking part of the string, from the nut to its position on the soundbody corresponds to the fifth (as with most contemporary instruments), the bridge should be placed very high on the soundboard (right of the drawing) with the consequence that the playing of the instrument would be very difficult (physically) because of the playing position repositioned towards the top of the instrument (towards the right in figure 10).

In the literal interpretation that we have proposed, the configuration where the speaking length above the neck equates to the location of the fourth and gives a similar design (Fig. 11) to Neubauer's (compare with figure 9). However, the positioning of the bridge on the soundboard in case it should equate a fifth (figure 12 to compare with figure 10) is more in keeping with conventional *ʿūd* organology.

Figures 13 and 14 show two extreme positions of the bridge in Neubauer's interpretation (Fig. 13) and with ours (Fig. 14). Both interpretations remain acceptable.

Another Arabic version in our possession is Dieterici's[58]:

'and the best of instruments [they made] was the *ʿūd* which had length, width and depth in the best proportions which is half the length is as its width and its half, and its depth [be] as the half of its width, and then its *depth* will be a quarter of its length [...]'[59].

This version is disconcerting as it makes no mention of the neck of the *ʿūd*, but it must be inferred here that the 'second' depth in the cited text (in italics) is in fact the neck of the *ʿūd*. Neubauer's interpretation would be more logical which says that the second 'length' is that of the total, (length of the instrument while the first 'length' was that of the sound-box, which we have translated as 'body').

The same applies to Shiloah's interpretation which appears to agree with Neubauer's:

'We say that the people of this art maintained that the instrument called *ʿūd* should be made of wood, and that its length, breadth and depth should stand in a noble relation to each other, that is to say, that its length should be in the proportion of 3:2 with its breadth; its depth should be equivalent to half its breadth and its neck should equal one quarter of the total length of the instrument[60].'

It would appear that the interpretations of these two authors oppose our interpretation of the text. However, this does not explain the shifted positioning of the bridge should the length of the neck equate to the fifth. Nevertheless, should the first interpretation (Neubauer's and Shiloah's) be retained, the proportions between P (depth of the soundbox), l (width of the soundbox), $L_{(soundbox)}$ (length of the soundbox) and L (total length of the instrument), would equate to the (remarkable) series of 1:2:3:4. Neubauer has noted these proportions (at least for the first three

terms of the relation of 1:2:3) and compared them[61] to the *Kanz a-t-Tuḥaf ʿūd* for which we have produced two hypotheses for the placement of the bridge (Figs. 4 and 5[62]). Reconsidering the depth of the soundbox, as given by the authors (which as in *Kindī* is equal to 7.5 'fingers') he assumes that this soundbox should have had a width equating to twice the depth (or 2P = 2 x 7.5 'thick, muscular fingers'), which is correct, and a soundbox length of three times this value (= 22.5 fingers). This would disagree with the indications of the manuscript which says that it should be 27 fingers[63]; should the total length given be 36 fingers, the hypothesis of a soundbox with a length of 22.5 fingers would imply a neck 13.5 fingers long (or 36 fingers of total length minus 22.5 fingers for the soundbox). The author notes this discrepancy between 'theoretical' values and values given, in writing, in the manuscript. Since we have not had access to Farsi and Turkish versions[64], we were not able to check if the theoretical proportion was mentioned in the text. The opposition between theory and 'practice', (measurements of the different parts, written down) is explained by Neubauer from his interpretation of *Kindī*, and yields measurements similar: depth of 7.5 fingers, width of 15 fingers, still in a 1:2[65] relationship, with a soundbox of 26 fingers while, 'ideally', it should have been 22.5 fingers. This soundbox length is between three and four times its depth (between 22.5 and 30 fingers), and Neubauer assumes [*idem*, p. 295] that *Kindī* would have tried to describe two ʿūds in one: the Persian and the mace-shaped one[66], hence the compromise between the ratios of 1:2:3 and 1:2:4 (the third figure being the speaking length)[67], with proportions of 1:2:3,47. The author adds to his argumentation that the last ligature mentioned by *Kindī* ends at a quarter of the speaking length ('Mensur' in the text), and that the neck ends at a third of this length and that the width of the soundbox equates to half of its length (of the whole speaking length)[68]. On top of it all, Neubauer postulates, quoting *Kindī*, that we give below in its translation from the German:

> 'Half of the speaking length equates to the width of the [sound]box of the lute, and "this is the widest part of it [the instrument]. The location of the [greatest width[69]] of the lute must be placed at three finger's width from the end of the bridge towards the strings[70].

The reason is that it is facing ['gegenüber'][71] the place where the strings are plucked for the reason that this part [of the lute] is [that where the width is] the widest and therefore the most resounding [in our interpretation 'the most perfectly sounding']. The plucking point of the strings[72] is therefore placed at three widths of fingers above the bridge[73], because it is at this emplacement that there is a [point of] division of the string, a tenth"[74]. If we add three widths of fingers to the six fingers which separate the bridge from the lower part of the [sound]box, [and] we have a distance of nine fingers between the lower part of the box and its largest part, which is also the plucking point of the strings. If the lower part of the box is perfectly round [or rounded] in its bottom part, this should correspond to its radius. However, according to other indications given by *Kindī* the ['measure', or the 'length' of] the radius (and the depth) amount(s) to only 7.5 widths of fingers. Its 'largest width' here described is obviously given in reference to what he calls the total length of 36 fingers for an instrument of 9 fingers in depth, and of 18 fingers of width for an average bellied *ʿūd*. This supports the hypothesis [the 'supposition' that in his measurements *[Kindī's]*, different types of lutes would have been mixed-up, hence the confusion'[75].

Neubauer's two key-point argumentation are:

1. The emplacement and width of the bridge
2. The plucking point of the strings

These points will now be investigated.

A new argumentation about the shape and the proportions of the *ʿūd* as described by *Kindī*.

Kindī's text is clear about his emplacement of the bridge, notwithstanding Neubauer's interpretation. Undoubtedly *Kindī* says[76] that: 1. The *front side of string attachment*[77] (towards the top of the instrument when held upright) of the bridge is placed at 6 fingers from the lower end of the box (statement - 'the measurement of the width of the *mushṭ* [bridge] and the remainder behind it: 6 fingers' - 'behind it' meaning towards the lower end of the box; since the total length of the strings is 30 fingers and the total length of the *ʿūd* is 36 (see figure 15). 2. 'The neck measures a third of the length' of the vibrating strings (neck 'to the fifth'), that is 10 fingers (written). 3. The position of the widest part of the box (and of the *ʿūd*) is located at 7.5 fingers from the lower end of the box since it is clearly indicated that the box circumscribes an hemisphere (written). 4. The ideal

plucking point is at one tenth of the speaking length from the bridge, thus at 3 fingers (written).

It will be necessary to add, obviously, to the distance of 6 fingers from the tying point of the strings to the lower end of the box, 3 fingers of the distance between the bridge and the optimal plucking point ('and with regard the striking of the strings, it is situated at 3 fingers away from the *musht* [6 + 3 = 9 fingers from the bottom] because it is the position of one part of the string and it is its tenth') to measure a distance of 9 fingers between the plucking point and the lower end of the box, with which we agree.

Notably, Neubauer based his figures on the translation of *'muḥādhāt'* (which we interpret as 'along', 'in the proximity of') with 'opposite' or 'facing' (which is another meaning for *'muḥādhāt'*) and locates the plucking point of the strings on the line of greatest width, since 'this emplacement [of the lute] is [that where the width is] the greatest and the most resounding'; however, neither this is the only linguistic interpretation (see note 42 and figure 15) nor an organological rule as there are more considerations with regard the emplacement of the plucking point, such as intensity and timbre but also and principally, human morphology and the handling of the *ʿūd* while played[78].

As we have already explained, *Kindī* says that the optimal plucking position of the strings is *close to* the widest part of the box, but further in the direction of the neck: this concurs with our present knowledge of the *ʿūd* and its organology, and practice. Additionally, the *ʿūd* can also be played with the musician standing. This changes the plucking point towards the bottom of the instrument as the musician is obliged to hold or craddle it with his forearm[79], but the plucking points can also vary with other positions[80]; while sitting, the forearm is more relaxed as the wrist is positioned further towards the strings[81/82]; and of course a choice of particular timbre can also influence the plucking points.

Figure 17 has a stylised representation (seen from the top) of the forearm of an 'average-sized' musician (let us say about 1.68 metres tall) with his hand (bent), about 36 cm (or 18 '*Kindī*' fingers), between the hollow of the elbow and the tip of the middle finger, in plucking position. The distance between the resting point of the forearm (usually by its hollow) and the plucking point with a plectrum, varies (measurements are always approximate in these positions) between 20 to 28 cm, depending on the plucking angle and on the morphology of the performer, about 10 to 14 fingers according to

Kindī, or slightly less with a finger width of 2.2 cm, (for example, or of a smaller morphology of the standard ancient Arabian type - which is probable), thus (about) 9 and 13 fingers. This would locate it between *Kindī's* position (obtained by deduction - 9 fingers) and half of the length of the box length (13 fingers).

This constitutes the optimal (and not the ideal) plucking point preferred by generations of lutanists. It is possible for the player to lower slightly the elbow towards the base of the box (or to bend the wrist a bit more) and play closer to the bridge[84], or, inversely, by extending the arm on the soundboard, play closer to the neck. However, these positions correspond to specific types of playing, the first, closer to percussion and the second with more rounded sounds (with few high harmonic intensity and a generally more relaxed plucking of the strings and resulting sounds).

There is no imperative reason, either linguistic, organological, or morphological, therefore to impose forcibly the position of the largest width of the box to correspond to the optimal plucking point of the strings of *Kindī's* *ʿūd*.

As for the position of the 'widest part' of *Kindī's* *ʿūd*, it suffices to read thoroughly *Kindī's* text (note 42) to understand that it can only be at a distance of 7.5 fingers from the bottom of the instrument, and can not be, as Neubauer writes, at nine fingers from the bottom (*i.e.* at the optimal position of the plucking of the strings, the two positions being different).

Conclusions

The two main examples given in this article are only two among dozens of errors about the *ʿūd* in the specialised material[85]. These errors are the consequence, as we have mentioned it in the introduction, of negligence and of poor methodology. Certain interpretations, especially related to the 'harmonious' proportions are typical of 'Pythagorean conspiracy'[86], established from at least the 19th century, and which attempted at re-writing the history of music with Occidental principles gathered through theories and history of Ancient Greek music, force-feeding Oriental music in a reductive carceral mould. It suffices to read theoretical speculations of the *Ikhwān a-ṣ-Ṣafāʾ* and compare them with other precise descriptions of the same period (Figures 1, 6 or 15), or with modern or contemporary *ʿūds* (Figures 2, 3 and 18) to understand that the proportions of this instrument depend on each luthier, on traditions and local preferences.

The insistence of force-fitting these proportions in the Pythagorean carceral mould is all but denial of musical praxis[87].

This is particularly obvious with regard the description of the 'fretting' of the 'ūd [88] with which we are confronted on a daily basis in our researches on Arabian music. In order to rid ourselves from the consequences of schemes arising from these ludicrous errors, researches and publication of articles are no longer sufficient. It is imperative that these errors are eliminated as their publication with leading publishing houses will with time hide the truth forever[89].

Notes

1. This article draws from the author's book *Théories de l'échelle et pratiques mélodiques chez les Arabes – Volume 1 : L'échelle générale et les genres – Tome 1 : Théories gréco-arabes de Kindī (IXᵉ siècle) à Ṭūsī (XIIIᵉ siècle)* 1/4 (vol.), Librairie orientaliste Paul Geuthner, (Paris, 2010-11).

2. It would not be appropriate to explain, in the present article, the differences between a long-necked lute (*ṭunbūr*) and the short-necked instrument the technique of which, the structure and the art of its playing being considerably different for each of these instruments. For further explanations, see Appendix A in [Beyhom, 2010].

3. Most of these are about the assumption of the 'fretting' of the instrument, a myth which has been established and propagated by two Western authors cited in this article, respectively Farmer and Neubauer. See the sections about the 'fretting' of the *'ūd* in [Beyhom, 2010, Appendix A].

4. For example: the second cited article is printed in the *New Grove*, its contents are considered as truthful beyond reasonable doubt, and the mistakes it holds are widely broadcast. For instance a 2013 Google search for the following text: 'A spherical shape may even have been envisaged', linked to other sites: http://www.scribd.com/doc/64211493/The-Oud-The-King-of-Arabic-Instruments and http://www.oud.eclipse.co.uk/history.html, etc.

5. *Abū-l-Ḥasan Muḥammad ibn al-Ḥasan ibn a-ṭ-Ṭaḥḥān* was a musician of high repute during the Egyptian Fatimid Period who died sometime after 1057. He was mainly an instrumentalist and is with *Kindī* one of the very few having described the *'ūd* and its facture. His work entitled *Ḥāwī al-Funūn wa Salwat al-Maḥzūn* is in two parts the second of which being about praxis.

6. Farmer, Henry George: 'The Structure of the Arabian and Persian Lute in the Middle Ages', *Journal of the Royal Asiatic Society of Great Britain and Ireland* (1939), pp. 41-51.

7. Bouterse, Curtis: 'Reconstructing the Medieval Arabic Lute: A Reconsideration of Farmer's "Structure of the Arabic and Persian Lute"', *The Galpin Society Journal* (1979) [doi:10.2307/841532], pp. 2-9.

8. [Farmer, 1939, *op. cit.*, p. 47]: we find the description of these measure units (*'aqd* excepted) in a footnote of the same article (Farmer, 1939, *op. cit.*, p. 43, note n°4): 'Scale of measurements:-*iṣba'* (Arab.), *angusht* (Pers.) = 2.25 cm. *iṣba' maḍmūm* (Arab.), *angusht munḍam* (Pers.) = 4.5 cm. *shibr*

(Arab.) = 27 cm.'; the error consisted, as shown in this article, in one word: *maḍmūma*, as an adjective for *aṣābi'* (fingers). Farmer thought that *maḍmūma* meant 'joined', which is correct, but ignoring the subtleties of the language (or being too hasty in his lexicology) considered that one *iṣba' maḍmūm* was equivalent to the double thickness of a finger, which roughly doubled all of *a-ṭ-Ṭaḥḥān's* measurements.

9. There is a transcription by *Zakariyyā Yūsuf* of *Ṭaḥḥān (al-Mūsīqī), Abū-l-Ḥusayn Muḥammad ibn al-Ḥasan al-Ḥusaynī, Ḥāwī al-Funūn wa-Salwat al-Maḥzūn, Al-Majma' al-'Arabiyy li-l-Mūsīqā*, (Baghdad, 1976). In this transcription, p. 99, *Yūsuf* uses أمَا instead of فَلْذَ: Please note that extracts of the manuscript that we produce here are lifted from the pages of *A compendium of a Fatimid court musician - Ḥāwī al-Funūn wa-Salwat al-Maḥzūn* [Reproduction of the manuscript *Funūn Jamīla 539* of the *Dār al-Kutub* National Library of Cairo], edited by Eckhard Neubauer, Facsimile Editions 52, Institut für Geschichte der Arabisch-Islamischen Wissenschaften, (Frankfurt am Main, 1990, 87rev.).

10. In *Yūsuf* (1976, p. 99) اصبعًا is missing (وَجَرَضُدُسْتَدَكَنَاصِعًا).

11. According to *Yūsuf* (1976, p. 99) تركيبه for وَتَرَكَّبَ

12. In Neubauer, 'Der Bau der Laute und ihre Besaitung nach arabischen, persischen und türkischen Quellen des 9. bis 15. Jahrhunderts', Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften, Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität (Frankfurt am Main, 1993) pp. 279-378 [here p. 358], the term is transcribed as *'unuq'* which is one of two possibilities found with *'ūnq'* masculine or feminine), in the *Lisān al-'Arab* [Ibn Mandhūr, p. 3133].

13. As, for instance, in karate. In this case, the 'measure' can only be done at the level of the third phalanges (including the phalange on the tip of the finger as first one) of the 'tight' fist, with a finger width slightly larger to the width of a stretched finger (still measured from the third phalange), but the difference is minimal (about a millimeter per finger) and far away from Farmer's distinction who simply doubles the figure.

14. That the fingers be 'tightened' or 'joined'.

15. Farmer, 1939, *op. cit.* p. 43-4.

16. Which figures in the missing folios of the manuscript that Farmer had read. The whole of *Kindī's* epistle is given in the Annexes of (Beyhom, 2010).

17. *Kindī (al-), Ya'qūb ibn Isḥāq, Risāla fī-l-Luḥūn wa-n-Nagham (Mukhtaṣar al-Mūsīqā fī Ta'līf a-n-Nagham wa Ṣin'at al-'ūd)*, edited by *Zakariyyā Yūsuf, Maṭba'at Shafīq (Baghdād, 1965)*, p. 11:

فأول ذلك أن يكون طوله: ستا وثلاثين اصبعًا منضمة
بالأصابع الممتلئة الحسنة اللحم ويكون جملة ذلك ثلاثة أشبار

18. The measure made between the thumb and the end of the auricular of the hand well stretched (the old 'span' or the 'espan').

19. *Ma'lūf, Luwīs (Louis Maalouf), Al-Munjid fī-l-Lugha wa-l-A'lām*, 36th edition, *Dār al-Mashriq* (Beyrouth, 1997), p. 519.

20. The peg-box of the *'ūd* is at a varying angle with the neck, seen from the side. The total length of the *'ūd* cannot therefore take the pegbox in consideration. The total length of the instrument will therefore include only the neck and the soundbox.

21. The tenth edition of Merriam Webster's Collegiate Dictionary (Merriam-Webster, 1997, p. 805) writes that *'odd,* means: b (1) left over after others are paired or grouped (2): separated from a set or series 2 a: somewhat more than the indicated approximate quantity, extent, or degree … '. In *Ṣubḥī Anwar Rashīd's* quotation of *Ṭaḥḥān*, in *Tārīkh al-'Ūd, Dār 'Alā'u-d-Dīn*, (Damascus - Syria, 1999), p. 53, the terms used to describe the distance to the bridge *(musht)* are *iṣba'ayn wa kisr* (as it is mentioned by *Ṭaḥḥān's* above), this word describes a fraction. The English term *odd* correctly used by Farmer to

equate Arabic كسر corresponds therefore to the remainder of a group of elements (see explanations below). However, the measure Farmer gave (4.5 cm) could be slightly increased (to 5 cm for example), as this would bring back the position of the bridge *(musht)* to the position on contemporary *ʿūds*. It now remains to find out the distance between this base and the line of string attachment on the *musht*, about which *Ṭaḥḥān* gives no indication. If this distance is almost equal to the distance between the base of the bridge and the lower part of the instrument, this would coincide with *Khulaʿī's* proportions of the *ʿūd* given below.

22. See examples given at the end of the article.

23. These various hypotheses are re-visited in the section about *Kindī' s ʿūd* below.

24. *Khulaʿī, idem*, p. 53, figures 2 and 3. The proportions of this instrument are succinctly described in *Khulaʿī (al-), Muḥammad Kāmil, Kitāb al-Mūsīqī a-sh-Sharqiyy* [The book of oriental music / Le livre de la musique orientale] (1904), pp.49-53. The only literal indications about exact measurements being the length of the neck (19.5 cm and), the width of both its sides (4.5 cm by the nut and 5.5 cm at its junction with the soundbox), and the total speaking length (64 cm). These indications do not agree with measures taken directly from the diagram provided by the author, hence added corrections (to 5 mm) in the proportions below, since the measures were taken from a speaking length (on the author's diagram) equal to 64 cm.

The measures taken directly from the diagram are given in bold figures:

1. Total measured length = **71.5** cm = *L*
2. Total measured width = **35** cm
3. Total depth: unknown
4. Neck: written → 19,5 cm (x 4.5 at the nut and 5.5 cm at the junction with the soundbox). Measured → **19.5** (x **4.5** cm at the nut and **7** cm at the junction with the soundbox.
5. Length of the soundbox (measured) = **52** cm
6. Emplacement of the bridge (measured) = **7.5** cm
7. Total speaking length (written and taken as measurement unit) = 64 cm
8. Speaking length of the string above the soundboard (calculated) = 64 cm - 19.5 = 44.5. The measured length is **44.5** cm
9. Optimal plucking point (calculated from the bottom, to the centre of the protection plaque) = **15** cm
10. Soundbox: width/length = 15/26 = more or less 5/9; Depth/width unknown.

25. British Museum copy from Or. 2361, folio 261, obv. in Farmer, *op. cit.* p. 49.

26. *Ankasht dast* in Farsi, which would seem to equate to a 'finger', according to the *Anṭūn Ilyās, Farahnak Nwīn (ʿArabī-Fārisiyy)*, translated by *Muṣṭafā Ṭabāṭabānī*, Tehran, p. 364

27. Farmer, 1939, *op. cit.*, p. 48.

28. Several interpretations can bring up changes in the proportions of the instrument. We are currently working on a forthcoming book devoted to the *ʿūd* and its history as well as its making, its tunings and so forth. We shall note here as we shall see later that the *ʿūd* in *Kanz a-t-Tuḥaf* is very close to *Kindī's* (9th century, nicknamed 'the philosopher of the Arabs'). Excluding the neck which is shorter (9 instead of 10 fingers, see figure 3), but this discrepancy could come from an imprecise definition of the distance to the bridge *(musht)*. The proportions of the soundbox (depth/width = 1/2) show that *Kindī's* description of the principle that we reproduce in the second part of this paper about the hemisphere being inscribed in the soundbox, is possible for this instrument.

29. Let us note here that Farmer quotes an alternative formulation, from *Kanz a-t-Tuḥaf*, for certain proportions of this *ʿūd* (or for another). To be more precise: *Another authority says that the length of the lute should be one and a half times as much as its width, and the depth should be one half of its width* (See Farmer, 1939, *op. cit.*, p. 48). This formulation not being supported by any precision, we could not

have included it in our article.

30. Farmer died in 1965 (see Wikipedia contributions, 'Henry George Farmer' Wikipedia, the free encyclopaedia (2013-1-4)http://en.wikipedia.org/w/index.php?title=Henry_George_Farmer&oldid=531344193], or Cowl, Carl et Sheila M Craik, Henry George Farmer: a bibliography, Glasgow University Library Studies, GLUS, Scotland, 1999), He would have had plenty of time to make emendations between 1939 when he wrote his article on the *ʿūd* and his death. We had to rely on Bouterse's article, ten or so years after to address the matter.

31. Poché, Christian, *ʿŪd*, Grove Music Online, (2001-2014), p. 25-31 in Volume 26 of the printed edition of 2001.

32. Poché, *idem*, p. 26: '[A] spherical shape may even have been envisaged: *al-Kindī* (9th century) described the body of the lute as a ball divided in two.' The author, does not give any bibliographic reference for *Kindī*, and even does not mention any scholar from whom he would have lifted the descriptions.

33. *Idem*

34. *Idem*, p. 30

35. *Idem*: 'al-Kindī (9th century) described the body of the lute as a ball divided in two, but a century later the *Ikhwān al-Ṣafāʾ* Encyclopaedia (Shiloah, 1978) suggested "harmonious proportions"'. The work cited is from Amnon Shiloah: 'The epistle of music of the *Ikhwān al-Ṣafāʾ:* (Bagdad, 10th century), *Tiʿud ve-ʿiyun*, 3 (1978), Jerusalem'.

36. *Kindī (al-), Yaʿqūb ibn Isḥāq, Muʾallafāt al-Kindī al-Mūsīqiyya* [Works of *Kindī* on music], editor *Zakariyyā Yūsuf, Maṭbaʿat Shafīq (Baghdād*, 1962).

37. *(Yaʿqūb ibn Isḥāq Abū Yūsuf - 0801?-0867? al-Kindī) : [The epistle of al-Kindī on melodies and notes], manuscript edited by Zakariyyā Yūsuf in 1965.*

38. Shawki, Dr. Youssef, *al-Kindī's essay on composition*, National Library Press, Cairo, Egypt, 1996.

39. The *shibr* (singular of *ashbār*), and the old 'espan' as aforementioned is a measurement unit which equals roughly to 18-24 cm, depending on the hand. It equates to the measured length between the tip of the thumb and the tip of the auricular finger when stretched flat and in opposite directions. If the *shibr* measures 12 fingers (36:3), a 'full' finger should be about 2 cm in width.

40. Arabic *kh[a]r[a]ṭ[a]* means to 'adjust', to 'shape' something, or to 'refine' or in another interpretation, to 'pick the leaves of' (a tree or a branch) (see [*Munjid, op. cit.*, p.174] and [*Abdelnour*, (Dr.) *Jabbour, Abdelnour,* Dictionnaire Moderne Arabe-Francais, 17th edition, *Dar El-ilm lilmalayin (Dār al-ʿIlm li-l-Malāyīn)*, Beyrouth, Lebanon, 2008, p. 445]). The *'khart'* of the *ʿūd* (could be a stick of wood), is mentioned by the *Lisān al-ʿArab* of (ibn) *Manzūr (1232-1311), Jamāl a-d-Dīn Abū al-Faḍl Muḥammad Ibn Mukarram ibn ʿAlī ibn Muḥammad ibn abī al-Qāsim ibn Ḥabaqa[t], Lisān al-ʿArab*, editors *ʿAbd-al-Lāh ʿAlī Kabīr (al-), Muḥammad Aḥmad Ḥasab-al-Lāh*, and *Hāshim Muḥammad Shādhilī (al-), Dār al-Maʿārif*, Cairo 1981, p. 1134: *'wa kharaṭtu al ʿūd(a) akhruṭuhu'.*

41. *Kindī*, 1965, p. 11:

طوله: ستا وثلاثين اصبعا منضمة - بالأصابع الممتلئة الحسنة اللحم - ويكون جملة ذلك ثلاثة أشبار. وعرضه: خمس عشرة اصبعا. وعمقه: سبع أصابع [112و] ونصفا. وتكون مسافة عرض المشط مع الفضلة التي تبقى وراءه: ست أصابع. وتبقى مسافة الاوتار: ثلاثون اصبعا، وعلى هذه الثلاثين الاصبع تقع القسمة والتجزئة، لانها المسافة المصوتة. فلذلك ينبغي أن يكون العرض: خمس عشرة اصبعا وهي نصف هذا الطول. وكذلك العمق: سبع أصابع ونصفا وهي ونصف العرض وربع الطول. ويجب أن يكون العنق ثلث الطول وهو: عشر أصابع. ويبقى الجسم المصوت عشرون اصبعا. وليكن ظهره على حقيقة الاستدارة. والخرط إلى جمة العنق، كأنه كان جسما مستديرا خطّ على بركال ثم قسم بنصفين فخرج منه عودان.

42. *Kindī*, 1965, p. 14:

« [...ا] ثم صيروا الجزء الذي بعد الثلث - وهو النصف - للعرض وهو
أعرض موضع يجب أن يكون فيه، ويجب أن يكون موقعه من العود
على ثلاثة أصابع من نهاية المشط إلى ما يلي الاوتار، والعلة في ذلك،
محاذاته لمضرب الأوتار ، وذلك أن هذا الموضع من العود أكثره سعة
واكمله دويا، وإنما صار مضرب الاوتار على ثلاث أصابع من المشط
لأنه موضع جزء من أجزاء الوتر وهو العشر.

In order to understand correctly this excerpt, one must be aware of four important facts in *Kindī's* reasoning. Firstly that this complementary description is part of an exercise in giving the proportions of the *'ūd* in simple ratios from 1/2 to 1/10. Secondly that *Kindī* uses it in order to give, elegantly, a detailed description of the positioning of the bridge and its width (details he would not give in the first description for the overall proportions of the instrument). Thirdly that in this second description *Kindī* differentiates the front from the back part of the bridge, fourthly he gives his explanations in a certain order, and with clear propositions of causality or exclusion that allow a complete understanding of his discourse. The strings on *Kindī's* *'ūd* must be, for clear organological reasons (the shear pressure on the front side of the bridge should the strings be tied on the back side) tied on the front part of the bridge (the side in the direction of the strings, *i.e.* in the direction of the neck - (see figure 15) the only purpose of which is devoted to explaining this particular point). The position of the 'widest part' of the belly, which is the diameter of the inscribed hemisphere (the 'ball divided in two'), is 'three fingers away from the *end of the bridge in the direction of the strings'* (our italics), *i.e., three fingers including the width of the bridge itself.* Knowing that the position of the widest part ('largest width') of the belly is already given as 7.5 fingers from the bottom (in the preceding excerpt), and knowing that the (front part - where, obviously, the strings are tied, as it is the overall proportions that are given in the first excerpt) of the bridge be placed at six fingers from the bottom, this indication gives us in fact not the position of the widest part of the belly (already given in the first excerpt), but the width of the bridge. The latter is deduced as the difference between the distance from the back of the bridge to the widest part (3 fingers - written data) minus the space between the widest part of the belly and the *front* of the bridge *i.e.* the difference between the position of the widest part of the belly (7.5 fingers - written data) and the position of the front of the bridge (5 fingers - written data), which gives 3 - (7.5 - 6) = 1.5 fingers. In what concerns the position of the 'optimal striking point on the strings', the order of succession of the descriptions, be it of the emplacement of the 'largest width' of the belly, or of the position for 'the plucking of the strings', excludes the second from the first because of the use of *'wa-innamā'* [translated by 'and with regard', but also would be 'however'] which divides the two segments of the phrase, *i.e.* in separate formulations (the early Arabic writing did not use, or very rarely, punctuation, and prepositions were used to divide the text in coherent sections). This means that the position of the optimal striking point on the strings is given *independently* from the position of the widest part of the belly (although the two are related, the latter being 'in the proximity' - *'bi-muḥādhāt'* - of the former, see our reasoning on this point lower in the text) as 3 fingers away from *the front side* of the bridge, as 'it is the position of one of the parts of *the strings* [and not of the soundbox or the complete length of the *'ūd]* and it is its tenth'. The result as shown in figure 15 is consistent with *Kindī's* descriptions.

43. Which are Pythagorean and based on the following progression: '1 2 3 4' or of the *tetraktys* model.

44. Poché, 2001, *op. cit.*, quoting the *Ikhwān a-ṣ-Ṣafā'*, 1978, p. 33, translated by Shiloah says that 'its length should be in the proportion of 3:2 with its breadth; its depth should be equivalent to half its breadth and its neck should equal one quarter of the total length of the instrument.'

45. *Ikhwān a-ṣ-Ṣafā', Rasā'il Ikhwān a-ṣ-Ṣafā', Turāth al-'Arab* 1/4 (vol.), *Dār Bayrūt lī-ṭ-Ṭibā'a wa-n-Nashr*, Beirut, Lebanon, 1983, p. 203, in Arabic.

46. In terms of geometry, the curve of the box circumscribes the hemisphere.

47. See also figures 8 to 14 for alternative interpretations.

48. See figure 6. Please note that we use here the term *iṣba'* with all numerals that concern the length or width in fingers, even though classic Arabic language requires other rules of usage (*i.e.* '9 *iṣba'*' instead of '9 *aṣābi'*', or '2 *iṣba'*' instead of *'iṣba'ayn'*), for consistence in measurements (one name for each type of measurement).

49. We shall note here that Farmer quotes an alternative formulation in *Kanz a-t-Tuḥaf* for certain proportions of this *'ūd* (or of another): 'Another authority says that the length of the lute should be one and a half times as much as its width, and the depth should be one half of its width.' (Farmer, 1939, *op. cit.*, p. 48): as written above, since this formulation did not include any other precision, we did not include it in our paper.

50. Neubauer, 1993, *op. cit.*

51. Neubauer, *idem*, p. 293

52. Reminder, see the sub-section in figure 7: 'the length must be one and a half time the width; the depth, half the width; the neck, one quarter of the length'.

53. *Idem*

54. *Idem*

55. *Idem*, p. 294

56. *Ikhwān a-ṣ-Ṣafā'*, 1983, p. 203:

ان أهل هذه الصناعة قالوا: ينبغي أن تُتخذ الآلة التي تسمّى
العود خشبًا طوله وعرضه وعمقه يكون على النسبة الشريفة، وهي أن
طوله مثل عرضه ومثل ونصفه، ويكون عمقه مثل نصف العرض،
وعنق العود مثل ربع الطول

57. Neubauer, 1993, *loc. cit.*

58. This is also the version to which Neubauer refers: 1993, *op. cit.*, p. 290, note 34.

59. Dieterici, Fr, Die Abhandlungen der ichwan *Es-Safa* in Auswahl Copie/, J.C. Hinrichs'sche Buchhandlung, 1886, p. 311:

وأحسن ما صنعوها الآلة المسماة العود فله جسم طوله وعرضه وعمقه على النسبة
الأفضل فهي أن يكون طوله مثل عرضه ومثل نصفه وعمقه مثل نصف العرض
[فعنقه] مثل ربع الطول

Here it must be added that the second 'عمقه' (its depth) has been replaced by 'عنقه' (neck), the first (repeated) term an error obviously, either from the copyist or of the edition.

60. *Ikhwān a-ṣ-Ṣafā'*, 1978, p. 32. Note that Shiloah's version is the only one giving a clear indication that the neck should be a quarter of the total length of the instrument.

61. *Idem.*

62. Note that the second hypothesis in figure 5 corresponds to a neck length equal to the fifth and that the position of the bridge is in the same proportion with the total length of the lutes in the *Ikhwān a-ṣ-Ṣafā'*, in Neubauer, figure 8.

63. The reader may come back to the sub-section about the *'ūd* described in this manuscript, above.

64. And not conversant with either of these languages.

65. According to Neubauer *[Idem.]*

66. Neubauer writes 'keulenförming' or mace-shaped, or shaped like a leg of lamb, explaining in a footnote page 40 that the *'ūd* 'keulenförming' has a width equal to a half of the speaking length (which he calls 'Mensur [von Steig bis Sattel]') - which is equal to 30 fingers (see figure 6) with *Kindī*, and that the 'rounded' *'ūd* ('gerundet') has a width equal to half of the

total length of the instrument (between nut and lower end of the soundbox).

67. 'Mensur' in his text - See note above.

68. See figure 6.

69. Placed in square brackets by Neubauer.

70. Our translation here is completely different from Neubauer's - See the part about *Kindī's 'ūd*.

71. Our translation of the Arabic *'muḫādhāt'* is 'alongside'.

72. In our translation, the sentence starts: 'with regard the plucking of the string, [it is placed...]'; in [Abdelnour, 2008, p. 188], *'innamā'* means 'only, uniquely' hence the possible equivalence 'and certainly [...]' which would give for the beginning of the sentence: 'and certainly the plucking point of the string is placed ...'. Our friend Michel Gébara, professional translator and jurist informs us that *'innamā'* for him means 'however', which confirms the meaning of the concession.

73. '[At] three fingers from the bridge' in our translation.

74. Here ends Kindī's 'citation'.

75. Neubauer, *idem*, p. 295-6: 'Die Hälfte der Mensur entschpricht der Breite des Korpus der Laute, und "das ist die breiteste Stelle, die an ihr sein darf. Der genaue Ort der [größten Breite] der laute muß drei Fingerbreiten vom Ende des Steges in Richtung der Saiten liegen. Der Grund dafür ist, daß er der Stelle gegenüberliegt, an der die Saiten angeschlagen werden, und dies, weil jene Stelle der Laute die weiteste und resonanzstärkste ist. Die Anschlagstelle [? the graphics of the text change below] kam aber deswegen drei Fingerbreiten oberhalb des Steges zu liegen, weil sich dort ein Teil[punkt] der Teile der [klingenden] Saite befindet, nämlich der zehnte". Addieren wir die drei Fingerbreiten zu den 6 Fingern, die der Steg vom unteren Lautenrand entfernt steht, so erhalten wir eine Entfernung von 9 Fingerbreiten vom unteren Rand des Korpus für seine breiteste Stelle, die gleichzeitig der Anschlagsstelle mit dem Plektrum entschpricht. Da der Korpus in seinem unteren Teil kreisrund sein soll, müßte diese Strecke mit seinem Radius identisch sein. Nach al-Kindī's sonstigen Vorgaben beträgt der Radius (und die Tiefe) des Korpus aber nur 7,5 Fingerbreiten. Seine an dieser Stelle beschriebene "breiteste Stelle" bezieht sich offensichtlich, bei der von ihm genannten Gesamtlänge von 36 Fingerbreiten, auf ein Instrument mit 9 Fingern Tiefe und 18 Fingern Breite, das heist auf einen durchschnittlichen bauchigen *'ūd*. Das verstärkt die Annahme, daß in seinen Größenangaben hier Werte unterschiedlicher Lautentypen ineinander geflossen sind, so daß sie ihrer Gesamtheit kein einheitliches Bild ergeben können'.

76. All of the following extracts have been referenced, unless otherwise specified.

77. On modern *'ūds*, the strings are attached as much as possible at the front of the bridge (if this is possible). The part which is glued at the back provides with a better strength against tearing-off under the tension of the strings. Should the strings be attached at the back, the front part would create a torsion line on the soundboard, making it more likely to be torn-off.

78. Marc Loopuyt (1989) explains efficiently in his article 'Mare Nostrum Comment nous tenir', La vocalité dans les pays d'Europe méridonale et dans le bassin méditerranéen: *Actes du colloque de La Napoule* (06), 2 et 3 mars 2000, éd par. L. Charles-Dominique et J. Cler, Éditions Modal (2002), the different positions which an *'ūd* player can take according to the type of playing, the habits, the tradition, the morphology, or social or economic needs.

79. Which generally modifies the timbre, making it richer in treble sounds: the reader can be given examples with Denny Walter, 'Music and Musicians in Islamic Art', Asian Music 17, 1 (1985), p. 37-68, here, p. 42 ('tenth-century ivory casket of al-Mughira, from Cordoba ; Paris, Louvre', and Denny, (1985), p. 49, 'Twelfth-century Fatimid ivory plaque[s] from Cairo depicting musicians [and dancers]; Florence, Museo Nazionale del Bargello' and also, the lute of Gandhāra line drawn by Marcel-Dubois that we include in figure 16; also 'l'ange musicien', end of the fourteenth century, 1390, detail of a triptych (reliquary, in Farmer, Bachmann, Besseler and Schneider, Musikgeschichte in Bildern: Islam, [Band III: Musik des Mittelalters und der Renaissance/Lieferung 2], Veb Deutscher Verlag Fur Musik (Leipzig, 1966), p. 109), extract from a manuscript at the 'Monasterio de Pieda, Academia de la Historia, Madrid'. The pegbox is scarcely visible, the plectrum is similar to those used by modern lute players although held differently and the 'musician angel' is standing.

80. See the 'woman lutanist' on a shard of the tenth, eleventh centuries, Egypt, Museum of Islamic Arts, 5395/2. (Farmer, 1966, p. 49).

81. See 'The *'ūd* player', silver coin of the tenth century, Baghdad. Staatliche Museen Berlin, Münzkabinett, n°212, (Farmer, 1966), p. 41.

82. See also the Byzantine ivory carving (9th - 10th centuries) part of four panels Hessisches Landesmuseum, Darmstadt No. Kg. SU. 215 http://www.vanedwards.co.uk/history1.htm.

83. *In* Marcel-Dubois, Claudie, 'Notes sur les instruments de musique figurés dans l'art plastique de l'Inde ancienne', Revue des arts asiatiques XI 1 (1937). pp. 6-49, pl. xiv-xv, ici p.41: 'C'est au Gandhâra que l'on voit pour la première fois un type de luth (Fig. I [notre figure]. Art gréco-bouddhique du Gandhâra. British Museum) qui se développera dans l'Inde jusqu'au VIIe siècle environ, puis passant par l'Afghanistan et l'Asie Centrale, deviendra le *pi-p'a* chinois et le *biwa* japonais actuels'.

84. As, for example, for the *Khula'i 'ūd* (Figure 2) where the protection plate is placed about 15 cm from the lower end of the box.

85. Some demonstrations have already been carried out in our Appendix A, Beyhom (2010), and others forthcoming in a specialised work in this field.

86. See Dumbrill, R., *The archaeomusicology of the Ancient Near East*, Trafford, Victoria 2005.

87. And an imposition of norms which could be applied but the practical value of which is not proven to this day.

88. See Appendix A in Beyhom (2010) and Beyhom, Makhlouf, 'Frettage du *'ūd* (luth arabe) dans la théorie musicale arabe et influence sur la pratique [The fretting of the *'ūd* in Arabian music theory and its interaction with practice]', 5ème Congrès de Musicologie Interdisciplinaire (CIM09), La musique et ses instruments, Fifth Conference on Interdisciplinary Musicology |Paris, 2009-10-26| [url: http://cim09.lam.jussieu.fr/CIM09-en/Proceedings.html, http://cim09.lam.jussieu.fr/CIM09-en/Proceedings_files/Beyhom-Makhlouf.pdf].

89. As the philosopher al-Fārābī has written, (quoted in Beyhom, 2010, p. 210): 'We shall neither linger [in our work] in the exposition of scientific principles of numbers or of their corollaries. The reader in need of further information will find it in arithmetical treatises. Neither are we eager to establish a relationship between the moods of the sky, the character of the soul and the musical intervals. This would be acting in the same manner as those who cannot recognise the virtues of each science. Having inherited of a redundant and diffused philosophy, they confuse the essential attributes of things, with their accidental attributes. Some abbreviators have imitated them. But those who have understood the refined philosophy, who have understood correct distinctions, emendated the errors that are the consequence of imitation and deleted the mistakes which hide the beauty of the ancient thought, those have met with a favourable welcome, as too many customs have been applauded wrongly, and too many compliments given without thought. We have attempted at progressing only in matters of which we are certain, without being bothered with calls of tradition. However, even with our greatest care and attention, it can be that certain mistakes have infiltrated our work. We hope that others with make appropriate emendations what is in excess or fill lacunae. We call for God's help, we beg for his mercifulness so that he allows us to conduct our task to its best.'

maximum width = 16 *iṣbāᶜ* = 2*L*/5

extending the neck, pegbox with length = 13 *iṣbāᶜ*

distance to *mushṭ* = 2 *iṣbāᶜ* 'odd' ≈ *L*/20

length of vibrating strings on the soundboard ≈ 25 *iṣbāᶜ* = 5*L*/8

neck length = 13 *iṣbāᶜ* = 13*L*/40

total length of the soundbox = 27 *iṣbāᶜ* = 27*L*/40

total length of the vibrating strings ≈ 38 *iṣbāᶜ* = 19*L*/20

total length of the *ᶜūd* = 40 *iṣbāᶜ* = *L*

maximum depth = 12 *iṣbāᶜ* = 3*L*/10

total length of the soundbox = 27 *iṣbāᶜ* = 27*L*/40

neck length = 13 *iṣbāᶜ* = 13*L*/40

Fig. 1. Drawing of *Ṭaḥḥan's* *ᶜūd*, 11th century.

Fig. 2. Reproduction of the drawing of an *ʿūd* in *Khulaṭī*, 1904/1905, p. 53.

distance to the centre of the rosette ≈ 29 cm

optimal plucking distance = 15 cm

29 cm

15 cm

maximum width ≈ 35 cm

≈ 7 cm

4,5 cm

width of the *mushṭ* ≈ 4 cm

d ≈ 13,5 cm

to *mushṭ* ≈ 7,5 cm

length of vibrating strings on the soundboard ≈ 44,5 cm

neck length ≈ 19,5 cm

total length of the soundbox ≈ 52 cm

total length of vibrating strings ≈ 64 cm

total length of the ʿūd ≈ 71,5 cm

unknown depth

total length of the soundbox ≈ 52 cm

neck length ≈ 19,5 cm

Fig. 3. Revision of the ʿūd described by *Khulaʿi* (1904-1905). The measurements are those taken from the original drawing[24].

diameter of the 'semi-spherical body' = 15 *iṣbāʿ* = 5L/12

r = 7,5 *iṣbāʿ*

maximum width = 15 *iṣbāʿ* = 5L/12

width of the *mushṭ* is unknown

distance to tying point of the strings on the *mushṭ* = 6 *iṣbāʿ* = L/6

length of vibrating strings on the soundboard ≈ 21 *iṣbāʿ* = 7L/12

neck length = 9 *iṣbāʿ* = L/4

total length of the vibrating strings = 30 *iṣbāʿ* = 5L/6

total length of the soundbox = 27 *iṣbāʿ* = 3L/4

total length of the ʿūd = 36 *iṣbāʿ* = L

maximum depth = 7,5 *iṣbāʿ* = 5L/24

r = 7,5 *iṣbāʿ*

total length of the soundbox = 27 *iṣbāʿ* = 3L/4

neck length = 9 *iṣbāʿ* = L/4

Fig. 4. Drawing of the ʿūd in the *Kanz a-t-Tuḥaf*, 14th century, first hypothesis [28].

Diameter of the 'semi-spherical body' = 15 *iṣbāᶜ* = 5L/12

maximum width = 15 *iṣbāᶜ* = 5L/12

r = 7,5 *iṣbāᶜ*

Width of the *mushṭ* = 3 *iṣbāᶜ* = L/12

Distance to tying point of the strings on the *mushṭ* = 9 *iṣbāᶜ* = L/4

length of vibrating strings on the soundboard ≈ 18 *iṣbāᶜ* = L/2

neck length = 9 *iṣbāᶜ* = L/4

total length of the vibrating strings = 27 *iṣbāᶜ* = 3L/4

total length of the soundbox = 27 *iṣbāᶜ* = 3L/4

total length of the *ᶜūd* = 36 *iṣbāᶜ* = L

maximum depth = 7,5 *iṣbāᶜ* = 5L/24

r = 7,5 *iṣbāᶜ* = 5L/24

total length of the soundbox = 27 *iṣbāᶜ* = 3L/4

neck length = 9 *iṣbāᶜ* = L/4

Fig. 5. Drawing of the *ᶜūd* in *Kanz a-t-Tuḥaf*, 14th century? Second hypothesis with oversized bridge.

diameter of the 'semi-spherical body'
= 15 $i\d{s}b\bar{a}^c$ = 5L/12

optimal striking
distance = 9 $i\d{s}b\bar{a}^c$ = L/4

width of the *musht* =
1,5 $i\d{s}b\bar{a}^c$ = L/24

symmetry axes
of the 'sphere'

maximal width = 15 $i\d{s}b\bar{a}^c$ = 5L/12

r = 7,5 $i\d{s}b\bar{a}^c$

r = radius
musht = bridge
$i\d{s}b\bar{a}^c$ = finger or fingers

r = 7,5 $i\d{s}b\bar{a}^c$

distance to *musht* = 6 $i\d{s}b\bar{a}^c$ = L/6

lentgh of vibrating strings on the table
= 20 $i\d{s}b\bar{a}^c$ = 5L/9

neck = 10 $i\d{s}b\bar{a}^c$ = 5L/18

length of the soundbox = 26 $i\d{s}b\bar{a}^c$ = 13L/18

total length of the vibrating strings = 30 $i\d{s}b\bar{a}^c$ = 5L/6

total length of the $^c\bar{u}d$ = 36 $i\d{s}b\bar{a}^c$ = L

maximum depth = 7,5 $i\d{s}b\bar{a}^c$ = 5L/24

r = 7,5 $i\d{s}b\bar{a}^c$
= 5L/24

symmetry axis
of the 'sphere'

length of the soundbox = 26 $i\d{s}b\bar{a}^c$ = 13L/18

neck = 10 $i\d{s}b\bar{a}^c$ = 5L/18

Fig. 6. Drawing of *Kindī's ʿūd* as described in the *Risāla fī-l-Luḥūn wa-n-Nagham*, 9th century; *Kindī's* description is compatible with a monoxyle box and neck lute, like the Omani *qabbūs* or the Yemenite *qanbūs* (or *qambūs*) - see also figure 2 in Beyhom, Amine: 'Frettage du *ʿūd* (luth arabe) dans la théorie musicale arabe et influence sur la pratique [The fretting of the *ʿūd* in Arabian music theory and its interaction with practice]', Fifth Conference on Interdisciplinary Musicology - Music and its instruments, October 2009 http://cim09.lam.jussieu.fr/CIM09-en/Proceedings.html, http://cim09.lam.jussieu.fr/CIM09-en/Proceedings_files/Beyhom-Makhlouf.pdf.

maximum width = 2L/3

$r = L/3$

Distance
to the *mushṭ* :
unknown

length of vibrating strings on the soundboard :
unknown

neck length = $L/4$

length of the soundbox = $3L/4$

total length of vibrating strings = *unknown*

maximum length = L

maximum depth = 2L/3

$r = L/3$

length of the soundbox = $3L/4$

neck length = $L/4$
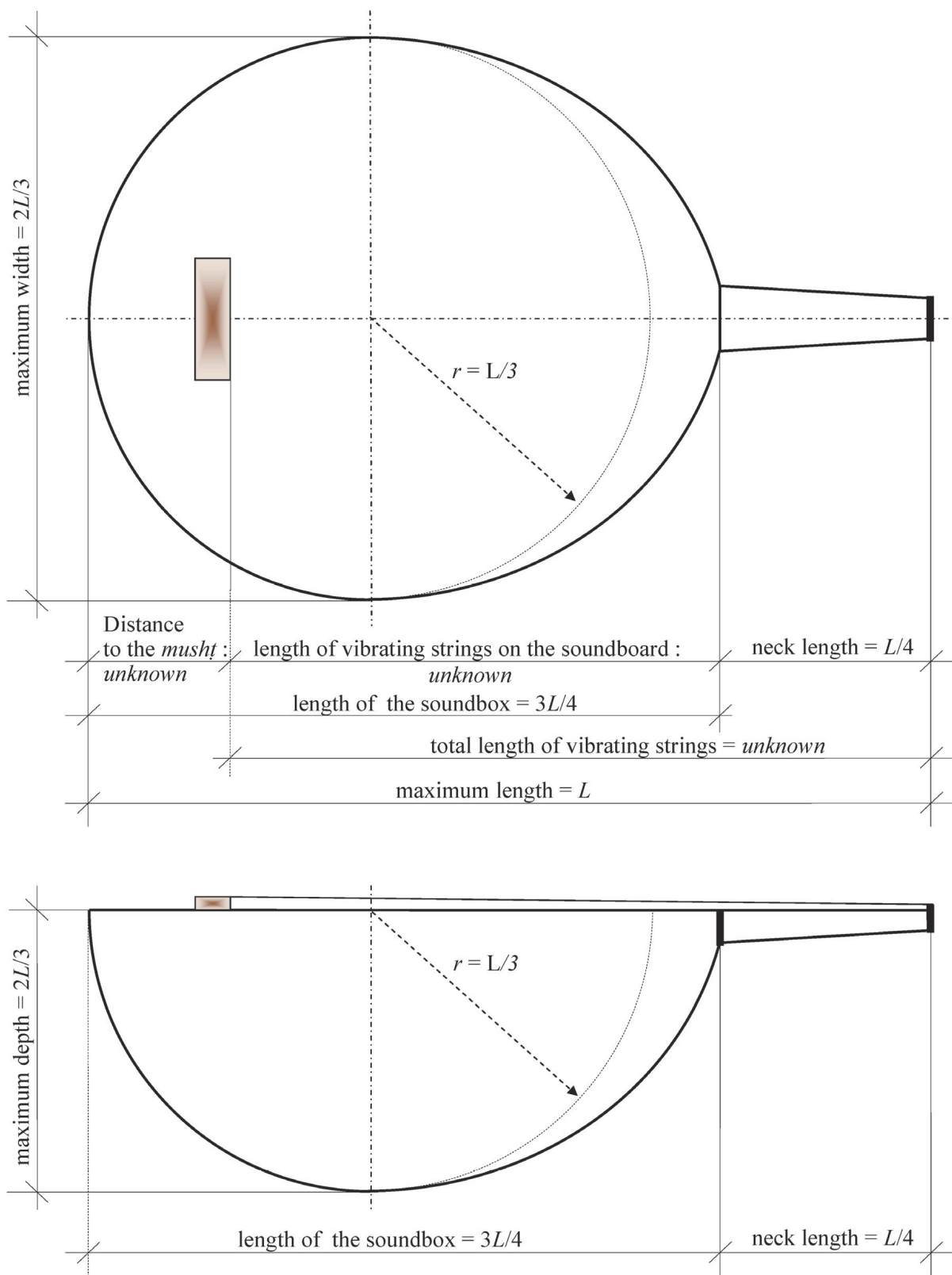
Fig. 7. Drawing of the *ʿūd* described by the *Ikhwān a-ṣ-Ṣafāʾ*, 10th century with the hypothesis of an almost circular soundbox[47].

maximum width = 2P

r = P

r = radius
mushṭ = bridge
iṣbā' = finger or fingers
P = depth of the soundbox
$L_{soundbox}$ = length of soundbox

Distance
to *mushṭ*:

unknown

length of the vibrating strings on the soundboard: *unknown*

neck length = P

length of the soundbox = L_{box} = 3P

total length of the vibrating strings: *unknown*

total length of the *ʿūd* = L = 4P

Maximum depth = P

r = P

length of the soundbox = L_{box} = 3P

neck length = P

Fig. 8. Drawing of the *ʿūd* in the *Ikhwān a-ṣ-Ṣafā'* in the hypothesis of 'noble' parts of the sound-box (according to Neubauer). The thick dotted lines show an alternative shape of the box, since the *Ikhwān* have not given indications of lengths, and the speaking length is still unknown, as is the position of the bridge.

Fig. 9. Drawing of the 'ūd in the *Ikhwān a-ṣ-Ṣafā'* in the hypothesis of 'noble' proportions of the parts of the box (according to Neubauer), and of the junction between the neck and the box equating to a just fourth. The speaking length become equal to the total length and the bridge-tailpiece is placed right at the bottom of the soundboard.

Fig. 10. Drawing of the 'ūd with the *Ikhwān a-ṣ-Ṣafā'* in the hypothesis of 'noble' proportions of parts of the box (according to Neubauer) and of the junction between neck and sound-box equating to the just fifth. The speaking length equals the length of the box, and the bridge is placed above the deepest of the box.
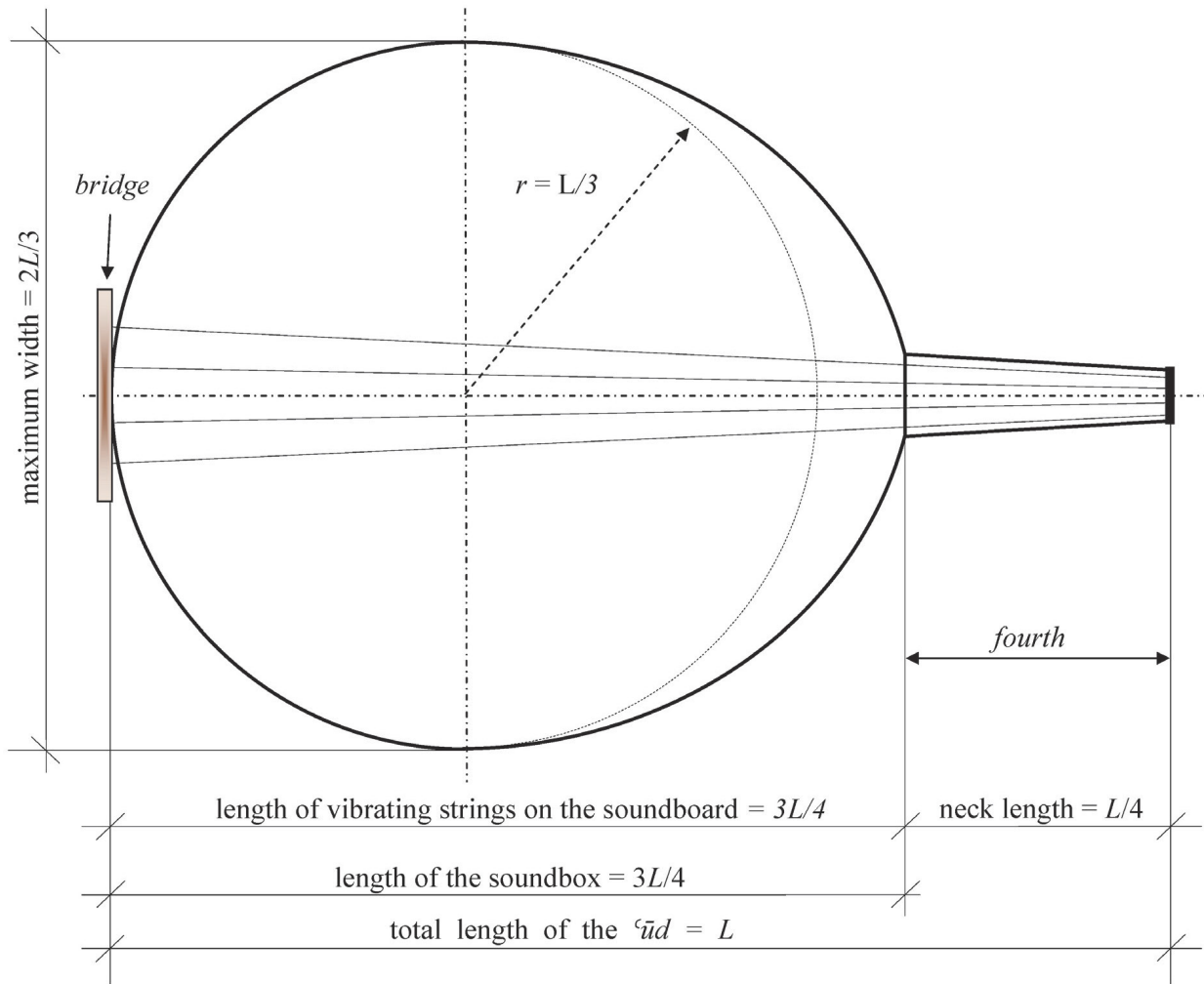
Fig. 11. Drawing of the ʿūd from the *Ikhwān a-ṣ-Ṣafā'* in the hypothesis of 'noble' proportions and of the junction between neck and box equating to the just fourth. The speaking length becomes equal to the total length of the ʿūd (in relation to Neubauer's interpretation) and the strings are affixed at the base of the box.

maximum width = 2L/3

bridge

r = L/3

fifth

distance to *musht* = *L*/4

length of vibrating strings on the soundboard = *L/2*

neck length = *L*/4

length of the soundbox = 3*L*/4

total length of the vibrating strings = 3*L*/4

total length of the ʿūd = L

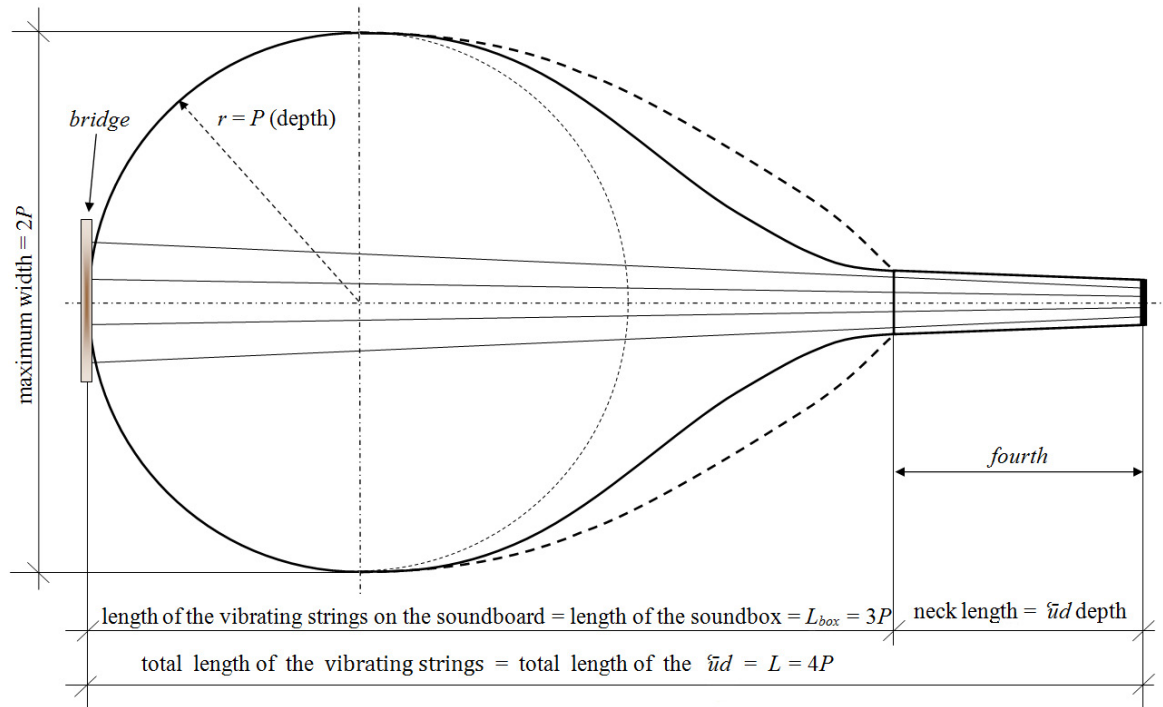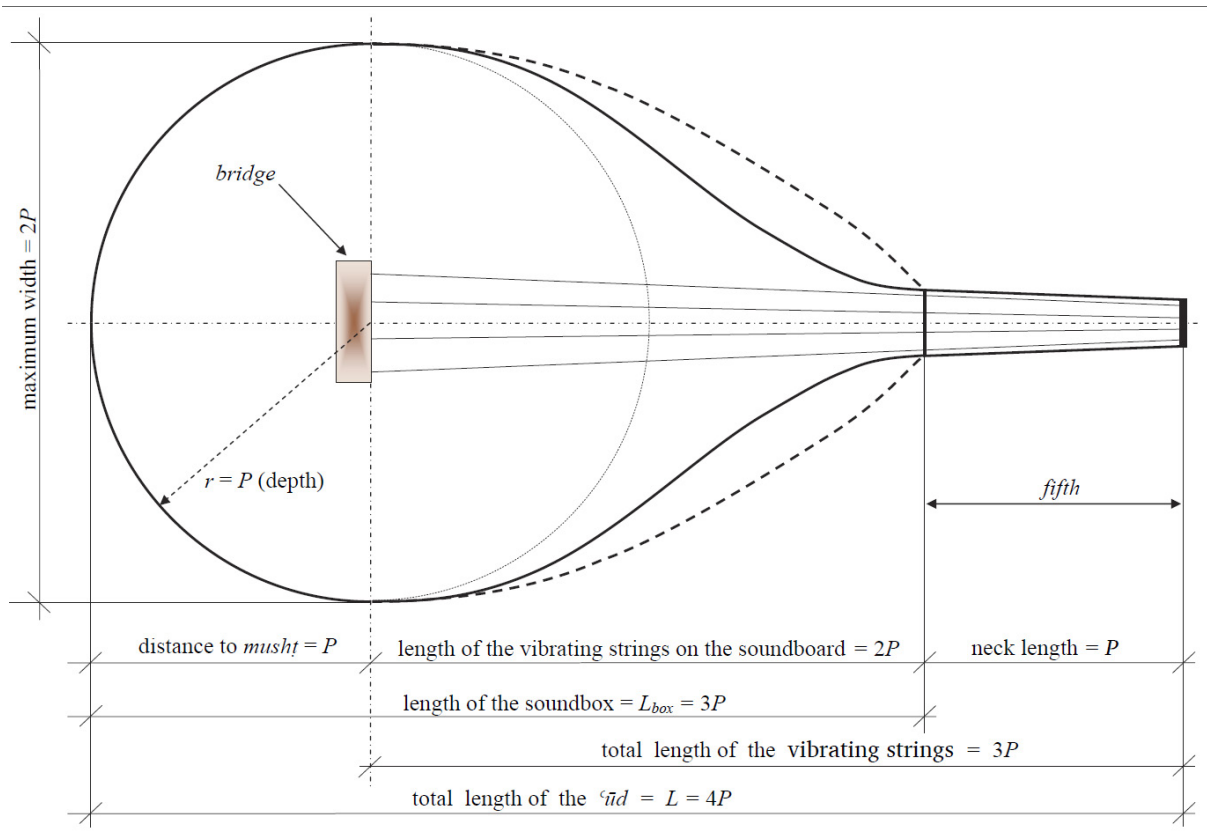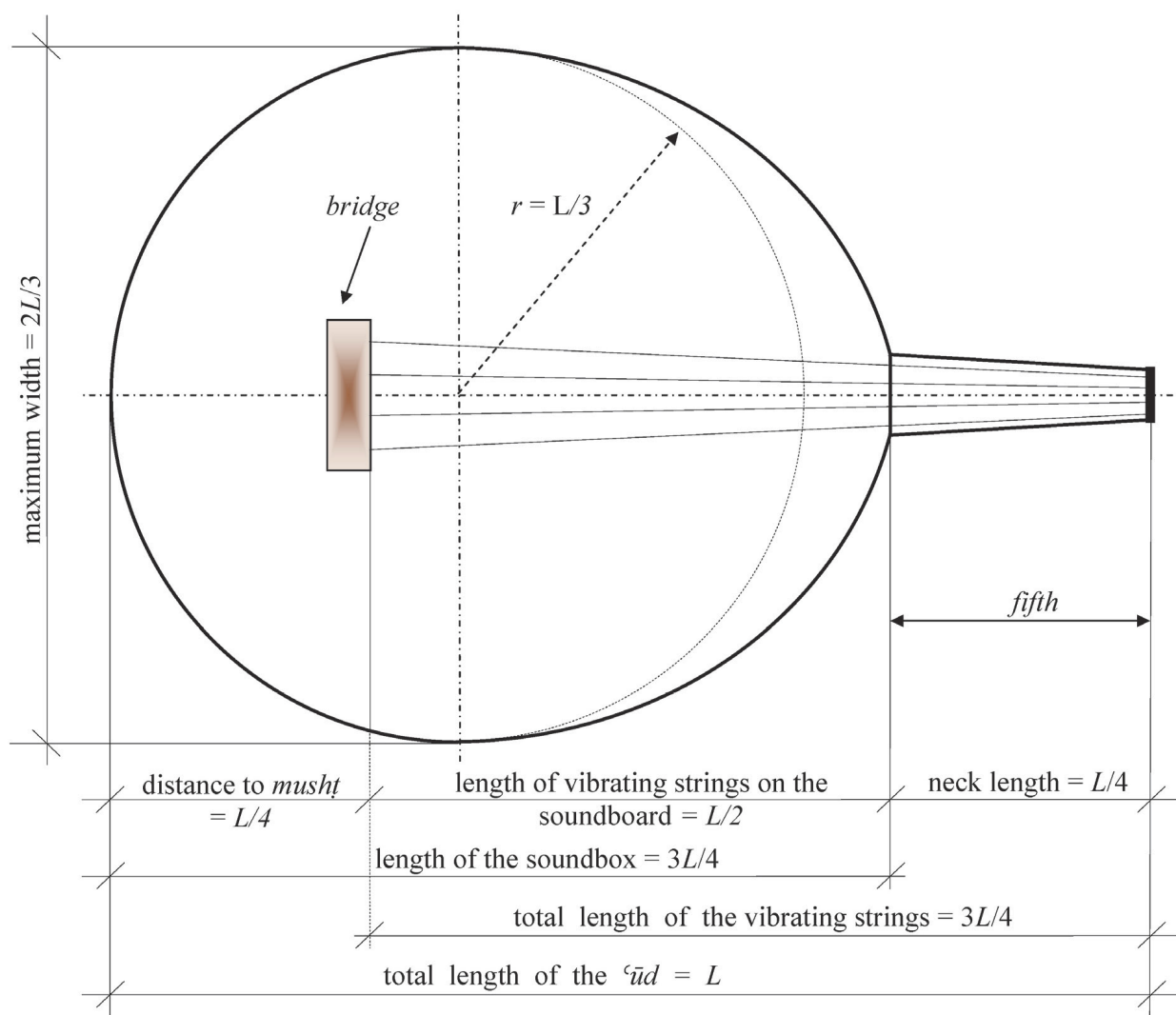Fig. 12. Drawing of the ʿūd with the *Ikhwān a-ṣ-Ṣafā'* in the hypothesis of 'noble' proportions of the parts of the box (in our interpretation) and the junction between the neck and the box equating to the just fifth. The speaking length equates to 3/4th of the total length of the ʿūd.

bridge if neck
length = fourth

r = max. depth

bridge if neck
length = fifth

extreme positionings of the bridge

fifth ≥ **neck length**
neck length ≥ fourth

Fig. 13. Drawing of the ʿūd in the *Ikhwān a-ṣ-Ṣafā'* showing the two extreme positions of the bridge, in Neubauer's interpretation.

Frères de la Pureté – AB (quarte + quinte) fig. 14

Fig. 14. Drawing of the *'ūd* in the *Ikhwān a-ṣ-Ṣafā'* showing the two extreme positions of the bridge in our interpretation.

diameter of the 'semi-spherical body'
(data) = **15 iṣbāᶜ** (fingers) = 5*L*/12

9 iṣbāᶜ = **6 iṣbāᶜ** (data – distance between the fore part of the bridge and the bottom of the soundbox) + **3 iṣbāᶜ** (data – one tenth of the string's lentgh)

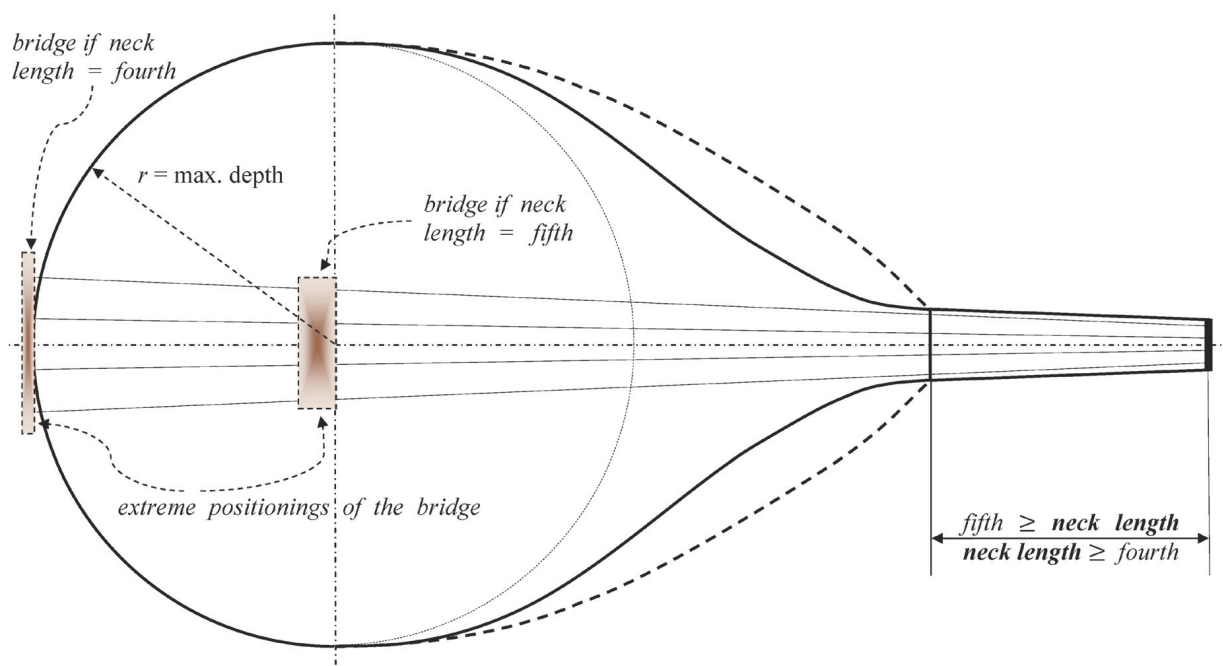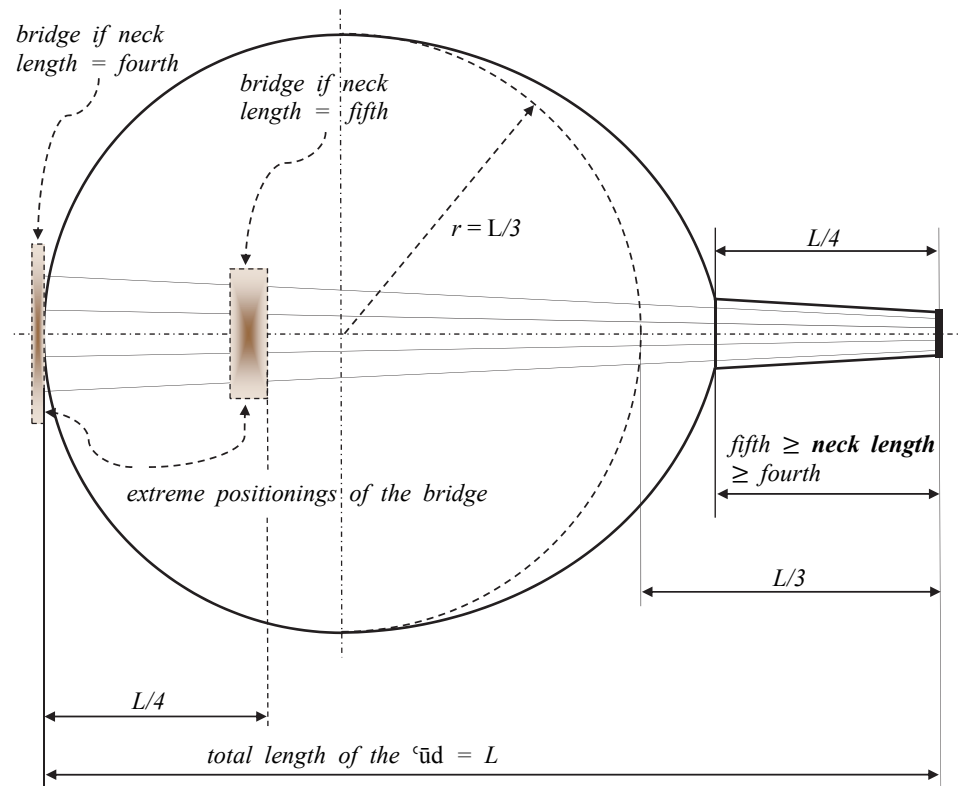*back side of the bridge*

optimal striking distance
= **(ded.)** = **9 iṣbāᶜ** = *L*/4

4,5 iṣbāᶜ = distance between the *back side* of the bridge and the bottom – deduced

4,5 iṣbāᶜ
(ded.)

3 iṣbāᶜ
(data)

3 iṣbāᶜ = distance between the *back side* of the bridge and the position of the widest part of the soundbox (data)

bottom of the soundbox

1,5 iṣbāᶜ – deduced as the difference between the optimal plucking point of the strings (9 fingers from the bottom of the soundbox) and the position of the largest part of the soundbox (7,5 fingers)

3 iṣbāᶜ
(data)

(data) distance from the optimal plucking point to the (*fore part*) of the bridge = **3 iṣbāᶜ** = *L*_strings/10

width of the *musht* = **1,5 iṣbāᶜ** = *L*/24 – ded.

maximal width = 15 iṣbāᶜ = 5*L*/12
(data)

front face of the bridge on which strings are tied

r **(data)**
= **7,5 iṣbāᶜ**

line of maximal width
(data) = **7,5 iṣbāᶜ** = *L*/4

third of the vibrating strings (perfect fifth)

r **(data)** = **7,5 iṣbāᶜ**

distance to *musht* **(data)** = **6 iṣbāᶜ** = *L*/6

lentgh of vibrating strings on the table **(data)** = **20 iṣbāᶜ** = 5*L*/9

neck = **10 iṣbāᶜ** = 5*L*/18
(data)

length of the soundbox **(ded.)** = **26 iṣbāᶜ** = 13*L*/18

total length of the vibrating strings **(data)** = **30 iṣbāᶜ** = 5*L*/6

total length of the ᶜūd **(data)** = **36 iṣbāᶜ** = *L*

maximal depth
= 7,5 iṣbāᶜ = 5*L*/24
(data)

r **(data)** = **7,5 iṣbāᶜ** = 5*L*/24

r = radius
ded. = deduced
musht = bridge
iṣbāᶜ = finger or fingers

length of the soundbox **(ded.)** = **26 iṣbāᶜ** = 13*L*/18
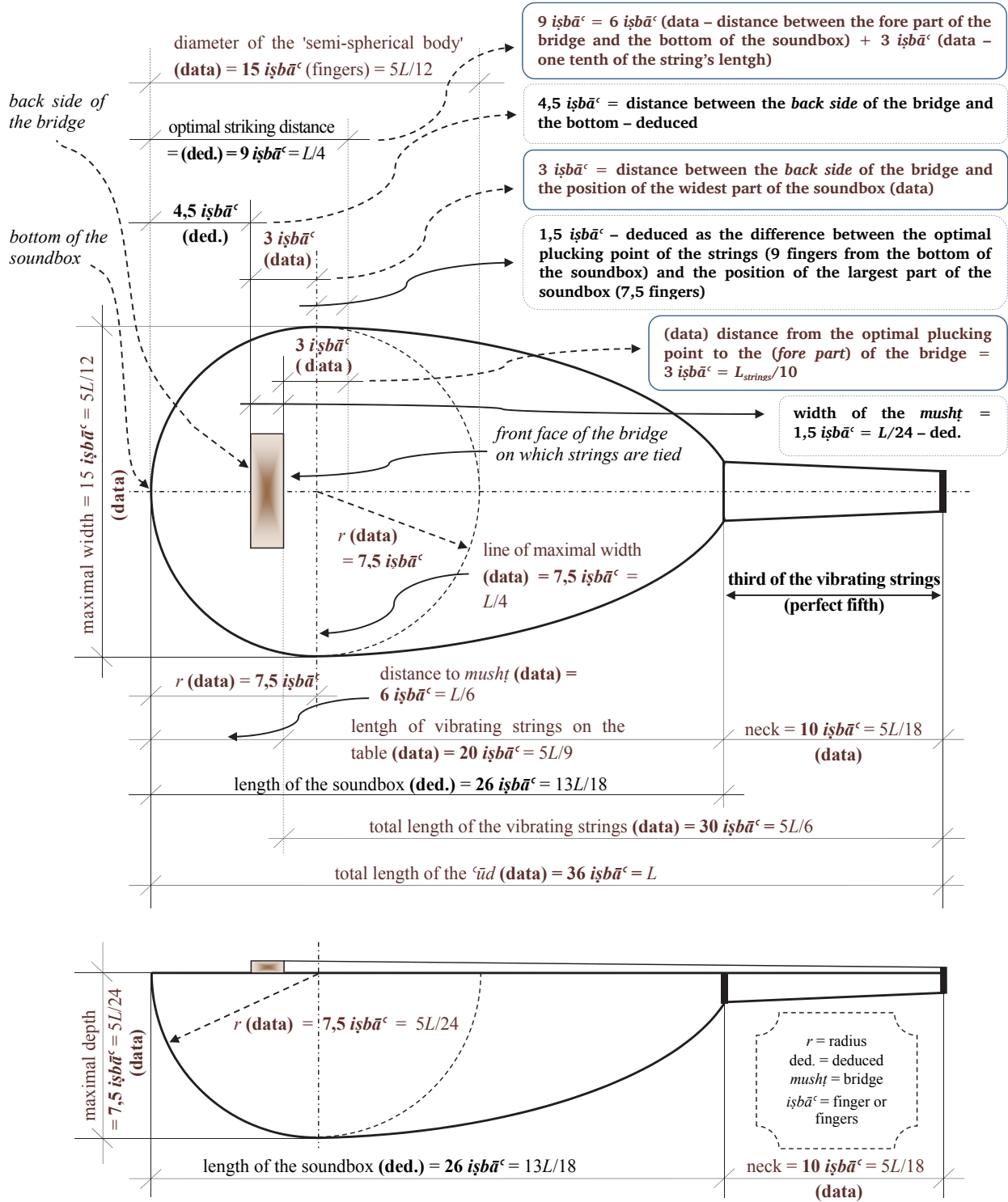
neck = **10 iṣbāᶜ** = 5*L*/18
(data)

Fig. 15. New drawing of *Kindī's ᶜūd* showing the reasoning determining the plucking point.
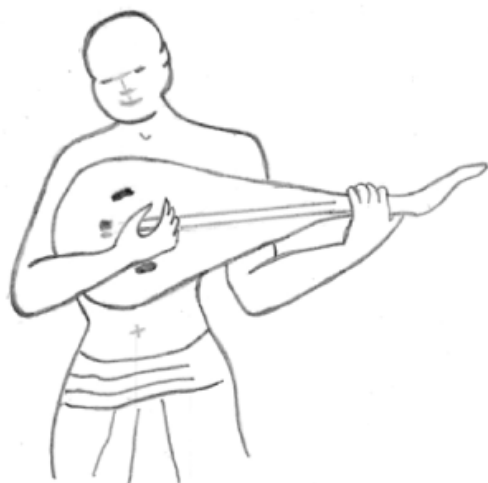
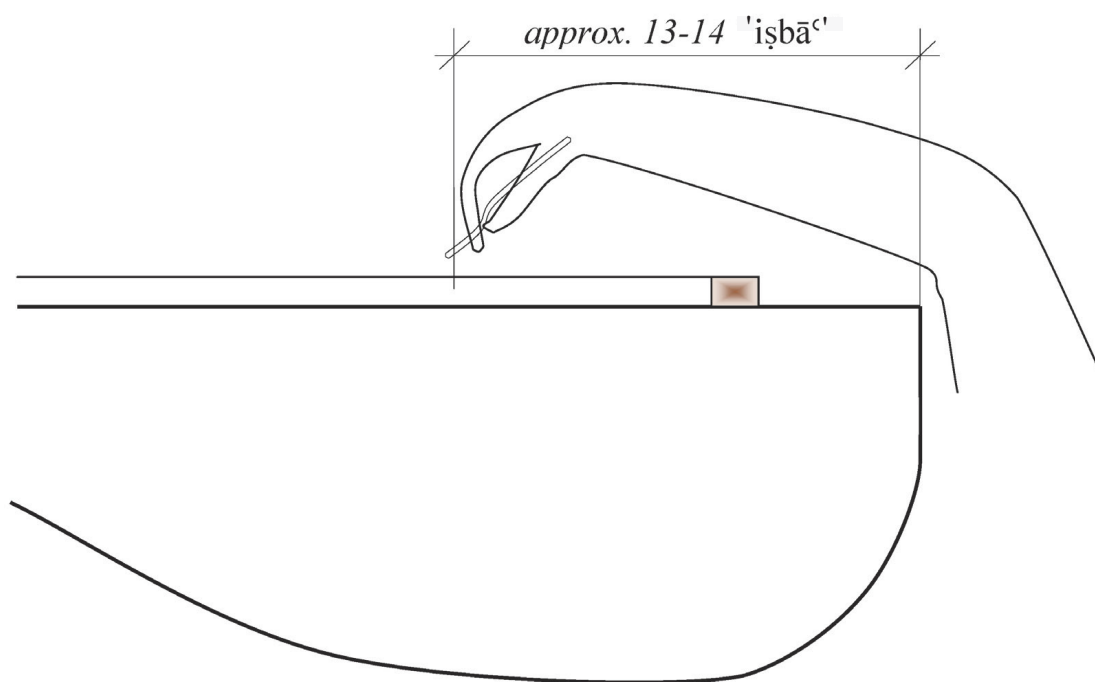Fig. 16. Tracing of an Indian lute of the *Gandhāra*, around 700[83].

Fig. 17. Stylised representation of the forearm of a musician holding a plectrum in plucking position.

distance to max.
width = 17 cm

maximum width = 37 cm

Distance to tying point
of strings = 12 cm

length of vib. strings on soundboard = 40,5 cm

neck = 20,5 cm

length of soundbox = 52,5 cm

total length of vibrating strings = 61 cm

total length of the ʿūd = 72,5 cm = L

maximum depth
= 17 cm

slice view of the soundbox 'Bīṭār
2001' (approximate shape)

distance to max. depth = 18,5 cm
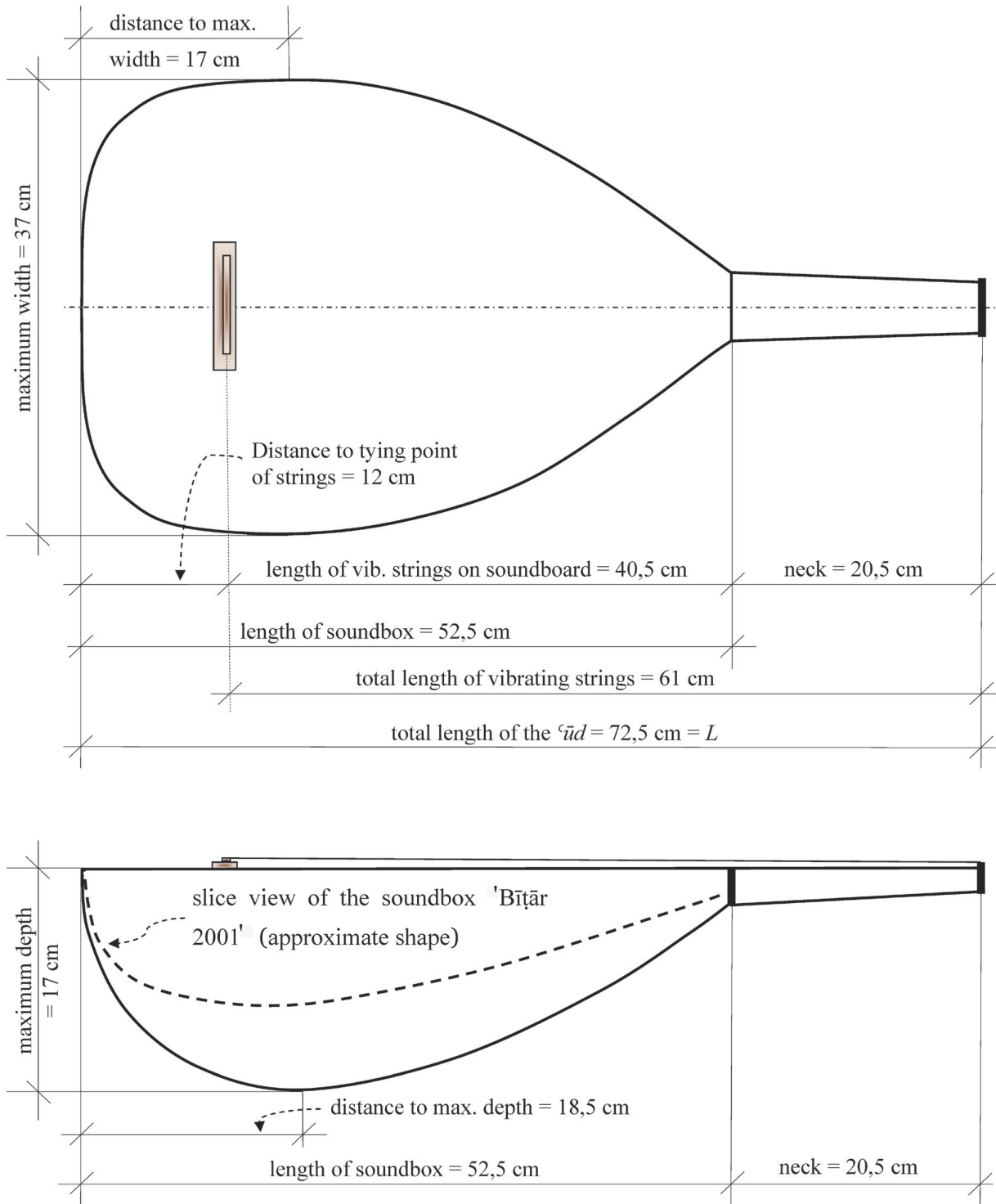
length of soundbox = 52,5 cm

neck = 20,5 cm

Fig. 18. Drawing of the *Biṭār-Saab* ʿūd. The original instrument was made by the Lebanese luthier Georges *Biṭār* in 2001-2002 for ʿūd teaching purposes at the Lebanese National Conservatory. The transverse-slice view is of the electro-acoustic 'Biṭār 2001' ʿūd shown in figure 19. The latter is a straight forward adaptation of the physical elements of which the *Biṭār-Saab* ʿūd is composed. No Pythagorean proportion can be seen were it for this instrument or for *Khulaʿī's* in figures 2 and 3.

Fig. 19. Front and side views of the *Biṭār ʿūd* with thin box. *(Biṭār 2001)*

THE ACCEPTANCE OF POP MUSIC IN MESOPOTAMIA:

The Mesopotamia lute of the Second Millennium B.C. and its socio-cultural context*

Theo J.H. Krispijn

Introduction

The lute appears on the Mesopotamian musical scene only after 2400 B.C., on two cylinder seals from the Sargonic Period. Since there is ample iconographic material of musical instruments preceding that period, it is natural to assume that the lute was introduced, from abroad, to Mesopotamia at a relatively late date.

The lute is well represented in scenes of folk music. Naked or scantily dressed men and women play the lute and percussion instruments, accompanying dancers and jesters with monkeys. More decently dressed lute-players appear on images only after the Old-Babylonian period. Since several lute-players wear a specific type of kilt, it may be possible to trace their ethnic origin, in some cases, or to connect them with certain professions. In this paper, I will write about the socio-cultural context or the ethnic background of the lute from the iconographic and relevant textual evidence.

In the first part of this study I shall sketch out the pictorial history of the lute in Mesopotamia and pay special attention to the ethnic background and to the social context of lute-players. In the second part I shall discuss the lute in Sumerian and Akkadian lexical and literary texts. I shall also briefly mention the diverse types of lutes.

* I am much indebted to Mervyn E. Richardson for improving the English of this paper and for some valuable suggestions concerning the paper itself.

I owe most of the materials presented in this study to Beate Henkes's[1] unpublished *Magisterarbeit*, who in her thesis gave a comprehensive iconography of the lute in ancient Mesopotamia and a discussion of the lute in textual evidence.

The Earliest Pictorial Evidence: The Sitting Lute-Player.

The first depictions of lute-players in Mesopotamia are found on two cylinder seals from the middle of the Sargonic period (Akkadian Ic-II ± 2270 B.C.)[2]. The first seal (Fig.1) shows a mythological scene: a bird-man is brought before Enki and his vizier Isimud, by another god. At the left a man, smaller than the gods, plays a lute of the long-neck type, holding it in a diagonal position. It is not clear if the player is sqatting or sitting on a cushion. He wears a beard and a tuft comparable to the one worn by the bird-man, which is unusual for ordinary men at that time. According to Wiggerman the bird-man is an enemy of the gods and a peripheral figure which can be associated to Western Iranians who were threatening Mesopotamia at that time[3]. The tuft is possibly a fixed long braid typical of South-Western Iran[4]. This kind of tuft is also known with Iški-Mari, king of Mari, and from women during the III millennium[5]. The details of the dress of the lute-player on this seal are not clearly detailed.

From the inscription on the seal we read that the owner of the seal was a certain *Ur-UR* **nar** 'Urur (?), the musician'. He would have been the lute-player represented. The name Ur-UR can also be read as **urteš**$_2$, a Sumerian word meaning 'servant of dignity'. Since this name occurs frequently in texts from the Fara-period (2600 B.C.) onwards, it can be assumed it is a Sumerian name[6]. This does not imply any form of racial discrimination that the musician would have had against his hosts, since foreigners often gave their children names from the prestigious local language which, in this case, was Sumerian[7].

The other cylinder seal (Fig.2) has no text. It shows a lute-player also wearing a beard and a tuft. He is sitting on a stool and holds his long-neck lute in the same position but with the other hand. His robe has a broad edge, similar to that of *Ištup-Ilum* of Mari, which is also depicted on Iranian iconography[8]. Fret marks and tuning pegs are visible on the neck of the lute. Neither the hair style

nor the dress of these musicians suggest that they were foreigners[9].

Nude lute players with braids

From the Old-Babylonian period onwards the lute becomes a widely-known popular instrument. Lute-players are depicted in many postures. A first group of Old-Babylonian lute-players is defined by nude individuals with typical belts and braids. They are sometimes shown dancing frenetically[10] (Fig.3) holding their lutes across their chests. (Fig.4, Iščali, Fig.5 Mari, Fig.6, Ešnunna, Fig.7, Munbaqa/Ekalte) A terracotta lute-player from Mari (Fig.5) with his head broken off, makes it impossible to say whether or not he was wearing braids, but his belt is typical of those who did. The dating of a relief from the Diyala (Fig.6) with a braided lute-player with frets showing on the lute, is contested; some place it in the Early Old-Babylonian period. However, Rashid argues that this type of lute come only in a later period and tentatively suggests an early Middle-Babylonian occurrence (± 1500 B.C.)[11]. Most braided lutanists, it will be noted, are found on plaques from North and North-Eastern Mesopotamia. Two plaques from another mould came from Nippur, and one from Hafaji. They depict a naked lute-player with braids, sitting between a dog and a pig (Fig.8), but it is not clear if he was wearing a belt.

Two steles from the Sargonic period give clues about the origins of these braided naked men. The first one is a stele of Sargon (Fig.9) showing captives with arms bound behind their backs. One of them, the second from the left, wears a braid. The second stele would be a depiction of Maništūšu[12] (Fig.10), and shows captives locked in a neck-stock. On this stele, the third captive from the left has an intricately twined beard and a braid hanging down from the crown of his head. We know from the inscriptions of Sargon and Maništūšu, that not only large parts of Iran were conquered, but also parts of Anatolia. Based on the vases and daggers carried by Akkadian soldiers on another fragment of the stele, Mellink proposed that these captives were Anatolians[13]. However, they are not wearing belts as those of the braided lute-players. It is only on an inlaid frieze from Mari that a captive with such a belt can be seen (Fig.11).

The braids of the musicians are different from those of the Sargonic period captives which hang down from the crown of their heads, but those of the musicians hang from the side of the head. This does not suggest that the braided lute-player was Anatolian. The belts of the Sargonic captives are also different. Their belts are typical of those worn by 'heroes' who had the same type in well known scenes from the Early-Dynastic and Sargonic periods[14]. A similar type is seen on the Bāseṭkī statue with has an inscription of Naram-Suen[15]. The lower half of the statue suggests that it depicted a naked hero holding a standard in his hands[16]. A tassel is attached to his belt which is similar to those of heroes on cylinder seals of the Sargonic period[17] and also as have the *lahama*-figures by the 'water palace *E'engura'* of Enki[18], but there, the heroes have curly hair and no braids.

In our attempt at finding the origins of braided and belted lute-players, we may assume that braids identified foreigners in Mesopotamia, but could also identify slaves as the *abbuttum*, was almost certainly a type of braid[19]. Since braided lute-players wore the same type of belt as the naked heroes, it is appropriate to look for individuals who could be connected to the **ur-saĝ**/*qarrādum* 'hero'[20].

saĝ-ur-saĝ, literally means 'head of the hero' and is the Sumerian equation for Akkadian *assinnu*, in Sumerian texts and lexical lists[21]. The *assinnu* along with his associate, the **kur-ĝar-ra**/ *kurgarrû*, partakes in the cult of Ištar both as a performer and musician. He was also as a cultic prostitute[22]. A male homosexual prostitute *(assinnu)* *Aṣūšu-nāmir* was granted access to the Netherworld (Ištar's Descent, line 92ff.), probably because he had no desire to reproduce, as this would be inacceptable in the Netherworld[23]. A Hymn to Iddin-Dagan (A) is worth mentioning. There, the *saĝursaĝ*-performers act as gods[24] with their hair or braids clasped with grips (**suh-kéš**) as they parade before Inanna:

'Tightening their hairgrips for her, saĝursaĝ-performers parade before her, holy Inanna. Their locks of hair at the back are adorned for her with coloured straps; they parade before her, holy Inanna. In the disguise of gods[25] they parade before her, holy Inanna.

The trustworthy man (//king) and the proud lady (queen?), the doyenne of the great wise women, parade before her, holy Inana.

Those who had taken the lower part of the spindle (symbol of femininity) put it on their side and parade before her, holy Inana.

> Those who are girded with a sword belt, the strength of battle, parade before her, holy Inana.
>   Grasping a spear, the strength of battle, in their hands, parade before her, holy Inana.'

Iddin-Dagan Hymn A 45-58 (translation ETCS 2.5.3.1 slightly adapted).

Then after, the *Kurĝarra* performers, close associates of the *saĝursaĝ*-performers, follow the royal couple:

> 'Young men wearing neck-stocks sing to her and parade before her, holy Inanna.
>   Young women, *šugia* women, their face wrapped, parade before her, holy Inanna. ......
> sword and dagger before her, they parade before her, holy Inanna.
>   With daggers in their hands, kurĝarra priests when they have ascended, parade before her, holy Inanna. Those who cover their swords with gore spatter blood as they parade before her, holy Inanna.
>   Blood is poured on the throne canopies of the guena hall, as the tigi, the šem and the ala (instruments) are made to sound loudly.'

Iddin-Dagan Hymn A 70-81 (slightly adapted translation ETCS 2.5.3.1).

The Iddin-Dagan Hymn describes a parade of *saĝursaĝ*-performers dressed-up as gods. They are followed by the royal couple which itself is followed by a group of males and females both partially and ambiguously dressed up both with male and female attire. In turn they are followed by young men and young women, with *šugia*-women mimicking captives and prisoners of war. **kur-ĝar-ra** literally means 'he, who has placed the mountain' or 'he who performs the foreign land', which could be interpreted as that 'he played the part of the enemy in the battle-play'. The *kurĝarra*-performers re-enacted a battle where they 'climbed up' a mountain made up of their colleagues(?)[26]. This could suggest that they pretended to climb mountains symbolizing the land of their enemies. Thus, the *kurĝarra*-performers apparently re-enacted a battle they would have had with foreign countries, representing the defeated and bleeding enemy. Therefore it would appear logical that they wore braids to imitate foreigners or enemies.

A passage linking *saĝursaĝ*-performers with construction works is written on Gudea's

Statue B IV 5-6: '*Women did not carry his basket but saĝursaĝ-performers built it for him*'. A copper statue of a girded and naked hero carrying a brick (Fig.12) figures as an illustration of the *saĝursaĝ*-performers where he is seen building, however, he does not wear a braid[27].

We may therefore safely assume that there is a connection between the *saĝursaĝ* and the *kurĝarra* as nude performers and lute players[28]. They did not belong to the higher circles of priesthood, in Mesopotamia, but were often despised and ill-treated. If we are right in our assumption that *kurĝarra*-performers imitated foreigners and enemies, then they could also have been those who played the lute, which at that time was known as an foreign instrument.

Lute, dwarfs, and monkeys

Many terracottas from the Old-Babylonian period show another group of bow-legged lute-players. These are often grotesque, nude dwarfs, prominently and erotically exposing their genitals (Fig. 13 Nippur, Fig. 14 ?). On the terracottas from Susa, in Elam, some details are particularly well defined such as their long beards and typical caps and belts (Fig.15-16), sometimes with a monkey sitting on their shoulders (Fig.17-18). There is an explicitly erotic plaque from Larsa (Fig.19) with a man playing the lute and the women a tambourine.

The bow-legged lute-players are not always depicted nude, but usually wear short kilts and a cap (Fig.20 Mari, Fig.21 ?). The bread stamp[29] from Mari includes nude women, monkeys and lute-players (Fig.20). The lute-players dressed in short kilts bend their legs, perhaps in rhythm to the dancers. The dancing-women have their hair pinned up and hold their hands as singers would[30]. Monkeys either sit or carry yokes[31]. A plaque from Ešnunna (Fig.22) shows a woman with a similar hairstyle. She holds a small lyre in the company of a man playing a frame-drum, wearing a cap, and a short kilt. A bold lute-player from Munbaqa/Ekalte (Fig.23) wears the same type of kilt as those worn by the bow-legged musicians.

One individual from Munbaqa/Ekalte (Fig.24) has a crown of feathers and a different type of kilt, mildly resembling one worn by a man on a chlorite vessel from Jiroft and to another depiction on a chlorite sculpture, of a man from Eastern Iran[32].

Feathers as ornaments of musicians are known as an early fashion coming from Iran and known in Adab (Fig.25). There, musicians wear short kilts and a flat cap, with or without feathers, in a spring festival parade. This piece belongs to the so-called intercultural style[33] which has influences of both Iran and Mesopotamia. However, the typical lute-player's kilt is decorated with feathers and suggests an Iranian background.

Fortunately we are well informed of music and musicians during the Old-Babylonian period from the Mari archives. Nele Ziegler has devoted several studies on this theme. Two types of less educated musicians are ('moins savantes'): the *huppum* and the *aluzinnum*. Ziegler describes the *huppum* as the dancer-musician, occasionally contracted by the *nargal*, the 'chief-musician' of the court. Sometimes the relationship between the two was strengthened when the chief musician gave crop fields to a *huppum*[34]. Ziegler identifies the *huppum* as a clapper-playing musician. She refers to an Old-Babylonian plaquette in the Louvre (AO 12443), on which two men with short kilts and conical hats both play this instrument[35]. Since these instances occur quite often in the Mari archives suggests that they might have been entrusted to a variety of musical tasks. The lute-players on the 'bread-stamp' from Mari (Fig.20) could be identified with the *huppum* since some of them have the same short kilts and more or less the same hat as those of the clapper-players. Their bent legs indicating that they were dancing, confirms this suggestion.

The nude lute-player, who is sometimes accompanied by a monkey, might be the *aluzinnum*-clown. He wears a slightly different cap from the *huppum*, but one with similar plating (Fig.15-16). The picture would be completed should we assume that the nude women with their special hair-style were the *kezertum*. In the Mari archives the *kezertum* are often mentioned as musicians, and lexical texts indicate that they had a bound lock of hair (**suhur-lá**), which fits with the hairstyle of the women on the stamp-seal. Since *kezertum*-women were strongly connected with prostitution[36] and music, it is very likely that it is these women which are depicted nude on the stamp-seal. Should the nude figures and lute players Should the nude figures and lute players wearing a short kilt, as depicted on plaques, be connected with the *huppum* and *aluzinnum*, we would be dealing with a group of musicians which would not belong to official court musicians, but to casual external and temporary labourers, although more permanent arrangements migh have occurred, occasionally.

Lute-players with short kilts and caps

Lute-players with short kilts and caps are depicted on several early Old-Babylonian plaques from southern Babylonia (Fig.26 Ǧirsu, Fig.27-28 Uruk37, Fig.29, Larsa). The two lute-players from Uruk are shown holding drinking vessels, apparently enhancing their performance in a tavern[38]. For the reason they wear kilts with a split similar to the Anatolian and North-Syrian ones (Fig.30, Alaca Höyük)[39], they might have originated from Anatolia. The lute-player on a *kudurru* of Melišihu with the same type of kilt (Fig.31) walks among cattle, apparently playing his lute while walking. His lock of hair falling on his sholder reminds of one of the hair-styles of North-Syrians at the beginning of the first millennium[40]. Lute-players with short kilts apparently originated from Northern Syria or Anatolia.

Lute-players with long robes

Sculptures of lute-players with caps and long robes are known from Susa from the Old-Babylonian period onwards (Fig. 32). Their long robes and conical caps are comparable to that of harp-players on terracottas from Old-Babylonian Ešnunna (Fig.33) and seem to be formal attire. Since harp-players were official temple musicians, the formal dress of lute-players may indicate that they had been integrated as cult-members. Another lute-player with a long robe appears on a cylinder seal from the Middle-Babylonian period (Fig.34): he plays the lute while another plays what could be a lyre. We have the same theme on a terracotta plaque from Middle-Babylonian Uruk, where a North-Syrian lute and a small lyre (Fig.35) are displayed together. The lute-player does not wear a cap, but has a North-Syrian hair-style.[41] The sculpture of a lute-player from Tell Harmal/Šaduppum wears a different type of dress (Fig.36), one for which I know no parallel.

The lute was apparently considered as an official instrument, in Elam, earlier than it was in Babylonia, during the Middle Babylonian period. It would have been a development proving the

acceptance of the lute as an instrument of foreigners and fringe-groups, in the Babylonian society.

The lute in lexicology and literature

As we have seen, the identification of Sumerian and Akkadian words equating to musical instruments, with lute-types represented in the iconography is difficult. In lexical texts of the third millennium B.C. there seems to be no mention of them. We have names of stringed instruments mostly including the word **balaĝ** '(stringed) instrument'[42], but none of them can indubitably be taken as meaning 'lute'. Furthermore, since this instrument does not appear in the iconography before the Sargonic period (± 2250 B.C.), a word for lute is therefore not to be expected in earlier lexical lists.

The new lexical tradition of the Old-Babylonian period is different. There, names of musical instuments appear in the first tablet of the encyclopaedic lexical series **Ur$_5$-ra** = *hubullu* (OB Hh I), listing trees and wooden objects OB Hh I 597-619).[43] The first entry of a section deals mainly with generic terms, in this case, the [ĝiš]**balaĝ**- 'musical instrument' (Hh I 597). Follows several entries with harps, drums, horizontal harps, types of (small) lyres, types of lutes (?), *sammû*-lyres, their parts, other lutes and their parts[44]. There is at least one section for lutes in the section about musical instruments: [ĝiš]**tigidlu**, [ĝiš]**tigidlu-kaskal-la**, [ĝiš]**tigidlu-sa-3**, [ĝiš]**tigidlu-elam-ma**, **ĝiš-gù-di**, [ĝiš]**dù-a**, [ĝiš]**šu-kara$_2$** OB Hh I 613-619.

There are also types of lutes in Šulgi's hymn B lines 162 ([ĝiš]**sa-eš$_5$**), 168 (**ĝiš-gùdi**), but without the [ĝiš]**tigidlu**. The technique of playing these instruments is described in the hymn below:

162 The (instrument) with three strings, also 'sound-box of music' I know how to pluck[45].
167-169 Like a skilful musician, although I had never heard the sound of the lute, whenever someone has brought it to me, immediately I know how it worked.Like something that I held in my hands before, I could handle it. When I tighten, loosen or fasten (the strings) for their tuning, they do not slip out of my hand[46].

The description of playing techniques helped my identification of some instruments in earlier publications[47]. Since, several types of lutes can be identified from their depictions, (long necked, short necked, with or without frets), it is

not surprising that there are several words for the lute. Anne Kilmer has discussed **ĝiš-gù-di** = *inu* in depth and proposed the translation of 'lute' and this seems certain only for literary texts from Šulgi onwards. But the **ĝiš-gù-di** must have had a wider meaning before, since the translation 'lute' does not fit the context of the Gudea Cylinder A VI 24-VII 2 (// VII 24-29)

'His beloved (stringed) instrument "Dragon of the land", famous loudly sounding wood, his counsellor ....'[48]

It must have been a prestigious cultic instrument and not the foreign and increasingly popular folk music type lute.

Three conclusions can be drawn about the lute:

- It was not introduced into Mesopotamia until the Sargonic period (± 2250 B.C.).
- It became increasingly popular as a musical instrument played by foreigners and fringe-groups in Mesopotamia during the Old-Babylonian period. Its popularity extended to the court of King Šulgi (± 2000 - 1600 B.C.).
- It became generally accepted as a musical instrument, only in the Middle-Babylonian period (± 1350 B.C.)

Illustrations:

Fig. 1. Akkadian seal impression, Ic-II ± 2270 B.C.

Fig. 2. Akkadian seal impression, Ic-II ± 2270 B.C.

Fig. 3. Old Babylonian terracotta plaque.

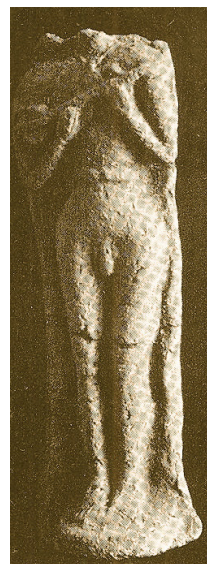Fig. 4. Old-Babylonian terracotta plaque from Iščali.

Fig. 5. Old-Babylonian moulded statuette plaque from Mari.

Fig. 6. Old-Babylonian moulded terracotta plaque from Ešnunna.

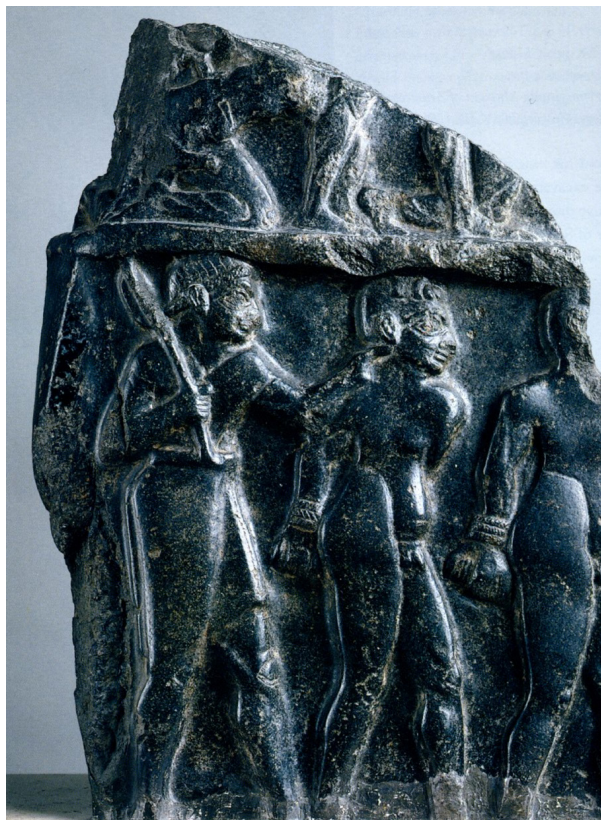Fig. 7. Old-Babylonian moulded terracotta plaque from Munbaqa/Ekalte.

Fig. 9. Sargonic Period stele.

Fig. 8. Middle-Babylonian Moulded terracotta plaque from Nippur.

Fig. 10. Stele of Maništūšu (?)

Fig. 11. Inlaid frieze from Mari.

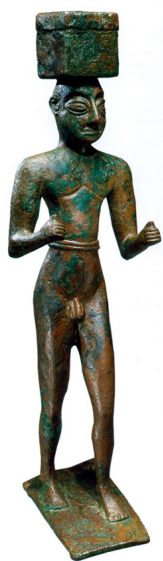Fig. 13. Old-Babylonian bow-legged dwarf from Nippur.

Fig. 12. Copper statuette of a girded naked hero carrying a brick.

Fig. 14. Old-Babylonian bow-legged dwarf from Nippur (?)

Fig. 15. Terracotta plaque from Susa.

Fig. 17. Terracotta plaque from Susa.

Fig. 16. Terracotta plaque from Susa.

Fig. 18. Terracotta plaque from Susa.

Fig. 19. Terracotta moulded plaque from Larsa.

Fig. 20. Terracotta moulded plaque from Mari.

Fig. 21. Terracotta moulded plaque from Mari (?)

Fig. 22. Terracotta plaque from Ešnunna.

Fig. 23. Moulded terracotta from Munbaqa/Ekalte.

Fig. 24. Moulded terracotta plaque from Munbaqa/Ekalte.

Fig. 25. Part of a vase from Adab.

Fig. 26. Terracotta moulded plaque from Ĝirsu.

Fig. 27. Terracotta moulded plaque from Uruk.

Fig. 28. Terracotta moulded plaque from Uruk.

Fig. 29. Terracotta moulded plaque from Larsa.

Fig. 31. Kudurru of Melišihu.

Fig. 30. Stone bas-relief from Alaca Höyük, Anatolia.

Fig. 32. Moulded terracotta statuette from Susa.

Fig. 33. Terracota moulded plauqe from Ešnunna.

Fig. 34. Middle-Babylonian seal impression.

Fig. 35. Middle-Babylonian terracotta plaque from Uruk.

Fig. 36. Moulded terracotta statuette from Tell Harmal/ Šaduppum

Abbreviations:

http://cdli.ox.ac.uk/wiki/abbreviations_for_assyriology
Abbreviations in the captions of the illustrations:
A. = Aruz 2003.
B. = Barrelet 1968.
C. = Campbell 1968.
Co. = Collon-Kilmer 1980.
Cz. = Czichon - Werner 1998.
H. = Harper 1992.
Hu. = Huot 1965.
O. = Opificius 1961.
R. = Rashid 1984.
Ri. = Rimmer 1969.

Notes:

1 Henke 2002.

2 For the phases of style in the Sargonic Period, see Boehmer (1965).

3 Wiggerman (1996), p. 216.

4 Aruz (ed.) 2003, Fig. 224e shows long braids fixed in tuft. For the long braids of Iranians see Orthmann (ed.) (1975) Abb. No. xxxiv, 293, 298, 299.

5 RlA Band IV: Haartrachten Abb. 9, 10.

6 The number of occurrences of the name **ur-UR** according to CDLI are: 9 from the ED IIIa (Fara) Period, 18 from the ED IIIb (Old-Sumerian), 1 Sargonic, 5 from the Ur III period, and 2 Early Old-Babylonian period. For a discussion about reduplicated names from Eastern Mesopotamia 'and its substrate language see Rubio (1999), 3.

7 There is little textual material for PN NIM/Elam in the Old Akkadian period, but a quick inspection of the names of people indicated with NIM/Elam (CDLI) in the Ur III period give several Sumerian names: **abba-gi-na**, **ab-ba-sa₆-ga** (**dumu**), **ab-ba-ti**, **ᵈba-ú-šu**, **ad-da**, **é-zi-šà-gál** (**dumu**), **egir-da**, i**gi.du**, **ku-li**, **lúdnin-šubur** (**dumu**), **lugal-iri-da**, **ᵈlugal-kúr**, **šeš-kal-la** (**dumu**), **ur-den-líl-lá** (**dumu**), **ur-sag**. Michalowski (2011) has demonstrated that the term NIM/Elam is a somewhat general term for 'highlander' and they were often involved in the escort of envoys and messengers. MAR. TU 'Amorite' is a comparable general term. From the Amorites listed in Buccellati (1966, p. 100), 20.5 % have Sumerian names, especially names with the elements **lú-**, **lugal-**, and **ur-**. Michalowski (2011, 105-110) has discussed the 'Amorites' as an ethnic designation, often as members of the royal guard.

8 Orthmann (ed.) (1975), Abb. 297h. Connan-Deschesne 1996, Fig. 185.

9 Cf. Collon-Kilmer (1980), 13-14.

10 Rashid (1984, 94) supposes that this player wears a skirt, but it is hardly visible.

11 Cf. (Henke 2002, 52:) Opificius 1961, 162 No 588; Parrot (1961), 303 Fig. 380; Strommenger (1962), 28, Barrelet 1968, 391, Fig. 772; Campbell 1968, 15 and Rashid (1984), 102 Abb. 105.

12 See Orthmann (ed.) (1975), 196 (Amiet).

13 Mellink 1963. 14 Aruz (ed.) (2003), Fig. 18.

15 Aruz (ed.) (2003) Fig. 58.

16 Aruz (ed.) (2003), p. 195.

17 Aruz (2003), Fig. 146.

18 Aruz (2003), Fig. 141.

19 In several Old-Babylonian legal texts the *abbuttum* is mentioned as a special slave mark. According to texts from the Old-Babylonian period, first half the head of a slave was shaved (**umbin ku5-ř** = *galābum* 'to shave'). and then the *abbuttum* was placed or made on the other half of the head (**gàr ĝar/ dù** = *abbuttam šakānum* 'to put on an *abbuttum* mark'). The *abbuttum* could well have been the braid under disquisition. The fish with an *abbuttum*, the *abbuttānu*, could well be the

Dactylopterus Orientalis (Salonen 1970, Fig. 18).

20 'Hero' is a traditional translation. The *ursaĝ* is in fact a warrior or champion of the king is. The *ursaĝ* is described as member of the elite troups of kings in Sumerian literature, cf. Enmerkar and the Lord of Aratta, line 59 ff. (ETCSL 1.8.2.1).

21 After the Old-Babylonian period **saĝ-ur-saĝ** is replaced by **ur-sal.**

22 CAD A/2, p. 341; CDA p. 26. The *assinnu* and *kurgarrû* are subjects studied by Lambert (1992), Maul(1992) and recently Teppo (2008).

23 In the Sumerian version of the myth a **kur-ĝar-ra** 'cultic performer of Inanna, male prostitute' and a **gala-tur** 'young (castrated) lamentation singer' are sent to the Netherworld (Inanna's Descent ETCSL 1.4.1 line 222 et seq.).

24 Maul (1992, 159-160) refers to texts that mention the fear for *kurgarrus*.

25 **kuš nam-diĝir-ra su-bi-a mu-un-ĝal₂** literally 'the divine skin is on their body'.

26 Early seals from Ur illustrate a circle or pile of nude heroes (Fig. 21).

27 See also Nissinen-Uro 2008.

28 The other 'heroes' are the *lahamas* standing beside Enki in his water-palace (Fig. 14A).

29 Blocher 1992, 85.

30 Krispijn, forthcoming.

31 Rashid, 1984, 74 thinks that the monkeys are performers in disguise. But since monkeys often resemble man in Mesopotamian art, *e.g.* in the Black Obelisk, Barnet-Lorenzini (1975), pl. 49, it is not necessary to think so. See also Spycket 1998 about the iconographic tradition of the monkey-musician.

32 Madjidzadeh (2003), 37, 43; Aruz (ed.) (2003) No 244.

33 Aruz (ed.) (2003), 325-45.

34 AbB 9 No 193, 11-16, Ziegler (2013), 64.

35 Barrelet (1968), No 829. Ziegler (2013), 63-65 and (2007), 261-75.

36 CAD K, 315 *kezertu* lexical section.

37 Rashid dates these two plaques to the early first millennium (1984), 106.

38 See also the role of the *aluzinnum* as bar keepers (Ziegler (2013), 66.

39 Cf. also Orthmann (ed.) (1975), pl. 350, 352, 353, 357.

40 Orthmann (ed.) (1975) pl. 357.

41 Idem.

42 See Krispijn (2012) especially the table on p. 60.

43 See Veldhuis (1997), 168-169; 191; 251-252.

44 Harps (ᵍⁱˢ**BALAĜ-DI**, ᵍⁱˢ**á-balaĝ** Hh I 598-599), big drum (ᵍⁱˢ**á-lá** Hh I 600) horizontal harps" (ᵍⁱˢ**al-ĝar**, ᵍⁱˢ**al-ĝar-sur₉** Hh I ; types of (small) lyres (ᵍⁱˢ**sa-bí-tum**, ᵍⁱˢ**mi-rí-tum**, ᵍⁱˢ**ur-za-ba₄-bí-tum** Hh I 603-605), (?) (ᵍⁱˢ**ur-gu-la**, ᵍⁱˢ**har-har**, ᵍⁱˢ**níĝ-har-mušen-na** Hh I 606-608), *sammû*-lyre and its parts (**zà-mí**, **kul-zà-mí**, **dub-zà-mí** Hh I 610-612); for the lutes and their parts (Hh 613-619) see above.

45 ᵍⁱˢ**sa-eš₅ ù šà-nam-nar-ra-ka šà-du-bu-la mi-ni-zu**

46 **dumu-nar-ra šu-tam-tam-ma-gin₇** ᵍⁱˢ**gù-di ĝiš la-ba-ra.(ab).tuku-a ki-ĝu₁₀.uš lú mu-ni-ib [túm.x.x ù-ne-en šà-bi ba-zu-zu níĝ-u₄.ba-e-dè-ĝá-ĝá-dè-[en?] ad-pà-dè gíd-i tu-lu gi-na šu-ĝu₁₀ la-ba-ra-è**. I have slightly modified my earlier translation, cf. Krispijn (1990).

47 See for the tentative identifications Krispijn (1990) and Krispijn (2010).

48 **balaĝ-ki-áĝ-ni ušumgal-kalam-ma ĝiš-gù-di mu-tuku níĝ-ad-gi₄-gi₄-ni**

MUSICONIS:

Is an Iconographic Database for Mediaeval Music Relevant to Archaeomusicology?

Frédéric Billiet and Xavier Fresquet

Archaeomusicology is essential to mediaevalists. While providing a diachronic perspective of music, it also offers a precise understanding of its meaning, of the importance of its performance, of its instrumentarium and of symbolical values of representations having reached us.

Thus etymological explanations, excavation reports, text analyses or representations in the light of ancient musical theory are as many informative sources adding to, illustrating or justifying musicologists' views for the Mediaeval Period.

Musiconis, which is a Mediaeval musical iconography project, is no exception as new interpretations can sprout from each illustration, each instrument and each character depiction, when placed in a wider historical and cultural perspective.

The lute is illustrative. If its organological variations appear to justify and illustrate various Mediterranean theoretical systems (its internal variations such as the number of its strings, its tuning, the number of its frets, and its external ones such as plectrum playing, or its playing with several fingers, simultaneously), illustrate changes in melodic and later in the harmonic instrumental functions during the Middle-Ages as well as changes

in repertoire and in musical language evolution.

In the course of this argumentation we shall explain how Musiconis operates, and in which manner it is original. Further we shall replace it in its technical contemporary context, and promote it among the web of data. We shall examine what is the purpose of archaeomusicology in this project and aim at finding a better research method within the European cultural and scientific communication channels in order to ease musicians' and musicologists' work.

1. Methodological basis for the Musiconis project

Musiconis mainly sprouted from Musicastallis[1] an earlier project devoted to the diffusion of essential musicological data extracted from Mediaeval music iconography, within the framework of French national scientific research[2]. Both projects were initiated by Frédéric Billiet, Dean of Music and Musicology at the Paris-Sorbonne University.

Musiconis originates from the joint work of three university research teams sharing complementary competence and aiming at devising an indexation and a diffusion model of mediaeval iconography.

Accordingly, Musiconis, offers a system which is both 'catalographic' and iconographic. It aims at exhibiting and analysing musical performance (of musicians, singers, dancers), depicted on the mediaeval material (between the VIIIth and the XVIth centuries). It benefits from a network of data partnership open to new exchanges of information. It offers a catalogue of more diversified scenes, with updated and improved descriptions and analyses. Additionally, it is in constant evolution in relation to innovative information and communication technology, as we shall see below.

With its musicological, historical and iconographic dimension, the ANR Musiconis project includes such associates as the research team Patrimoine et Langages Musicaux[3], the Sens, Texte, Informatique, Histoire[4] both of the Paris-Sorbonne University; the Signes, Formes et Représentations Centre d'Etudes Supérieures de Civilisation Médiévale (CESCM) de l'Université de Poitiers - With Isabelle Marchesin's iconographic research work; and propose a system made up from two interactive axes:

Musiconis

89 résultat(s)

Affiner votre recherche

ange

Rechercher

- **Champs de recherche**
- **Pays d'origine**
- **Siècle**
- **Objet**
- **Famille d'instrument**
- **Nom de l'instrument**
- **Type principal**
- **Genre**

DIEU LE PÈRE ENTOURÉ D'ANGES MUSICIENS
Notice n°25

Lieu de conservation : Saint-Martin, Bolsward, Friesland, Netherlands (**lieu d'origine** : Saint-Martin, Bolsward, Friesland, Netherlands)
Date : 1480 - 1499
Support : stalles, jouée haute
Objet, technique : sculpture sur bois
Instrument(s) : trompe (1), harpe (1), triangle (1), cymbales (1), luth (1), guiterne (1), vièle (1), orgue (1), flute (1)
Performateur(s) : Musicien (10)
Titre base partenaire : Dieu le Père entouré d'anges musiciens
Base partenaire : Musicastallis

ANGES MUSICIENS AU-DESSUS DE LA PRÉDESTINATION DE LA VIERGE
Notice n°273

1. The building up of a database of mediaeval images with music representations; and the development of online tools for data exchange between the various information systems.

2. The conceptualisation of theoretical tools allowing for a new indexing model able to integrate audible data to relevant images. This will be the starting point of converging scientific researches on the mediaeval soundscape.

From a theoretical standpoint, the focus of the partners' project articulates around the notion of the *'sound of the picture'*. An initial common postulation builds up to an argumentation leading to new iconographic and musicological thoughts:

Notwithstanding the visualisation of its emission, of its propagation and of its perception, the musical sound is visually evoked in multiple manners. These can be observed through arithmetical proportions, through organological choice of materials, morphology and detail configurations which will determine timbres as well as rational sound qualities; but also by means of 'orchestral gestuals' and/or intermingled in the representation field.

Shapes and colours are co-ordinated, significantly, to work together, at the core of the image and within the iconographic programme in which they are contained. The fields of the image as well as their surroundings of inscription, of architecture, of liturgy, of codicology or literacy, can be consi-dered as 'soundscapes' of which parameters and interactions [6] need to be determined.

It is this concept which united French and foreign researchers around the *Musiconis* project, with the intention of moving their thoughts towards musicological description. It must be a flexible, a comprehensive and an evolving data model allowing for accurate indexing of all musical scenes, in the widest meaning that we have just expressed.

After two year's work[7], the *Musiconis* database is in its testing stage. This is undertaken by our partners, in order to best respond to expectations of target users such as musicologists, historians and art historians, researchers in social sciences and humanities, musicians and luthiers...

Partners' Musiconis project databases

Initial (IRHT)	http://initiale.irht.cnrs.fr/accueil/index.php	Enluminated manuscripts of digitised catalogue from the Middle-Ages, kept in French and municipal and national libraries.
Gothic Ivories Project (The Courtauld Institute of Art)	http://www.gothicivories.courtauld.ac.uk/	Carved ivory objects picture database from Gothic and Neo-Gothic periods.
Mandragore (BNF)	http://mandragore.bnf.fr/html/accueil.html	Digitised catalogue of manuscripts kept at the BNF and at the Arsenal Library.
Musical Instrument Museum Online (MIMO)	http://www.mimo-international.com	Musical instrument database kept in public European collections.
Musicastallis (Université Paris-Sorbonne)	http://www.plm.paris-sorbonne.fr/musicastallis/	Picture database of musicians and singers in the choir stalls from Europe.
Romane (CESCM de Poitiers)	http://presnum.mshs.univ-poitiers.fr/romane/	Database of sculptures and monumental paintings of the Romanesque period.
Sculpture (Centre André Chastel)	No link available at present	Database of monumental sculptures in French cathedrals.
Vitrail (Centre André Chastel)	No link available at present	Database of stained-glass windows from French cathedrals.

This database regroups about 500 scenes at present. This number will increase significantly as soon as the indexing system is finalised and will offer new information to the users.

1. Organological data, with descriptions as precise as possible. For example, the lute can be described with no less than 60 different organological fields.

2. New iconological data from two specialised sections:

One devoted to the 'description of sound'[8] and the second to 'analogies'[9]. This will provide with a new interpretation of 'in context[10] representation', for instance illumination in the context of the page or the book where it figures, the stained-glass window in its spatial location, etc.; and other graphic elements which might complement our understanding of the musical performance in context.

In order to best illustrate both information sources, we shall now give two examples of scenes extracted from the *Musiconis* database.

Example 1: Three angels playing the lute and the harp. (Fiche n°41[11])

Information about the scene:

► Century: 15th
► Restoration : probably in the 19th century
► Objet type: Wood carving
► Support, location: stalls
► Iconclass: 11Q714531, 11G21, 48C7322[12]
► Location: Enville, Staffordshire, UK
► Database partner: *Musicastallis*[13]
► Original denomination: Trio of angels: lute and harp.

Organological details associated to the lute in the scene:

► Shape of the soundboard: Oval
► Shape of the sound-box: Rounded
► Fret-board: no
► Frets: yes
► Type of nut: not visible
► Strings passing on nut: not visible
► Size of nut: not visible
► Number of strings: 3
► Choirs: no
► Numbers of sound-holes or roses: none visible
► Position of tuning devices: not visible
► Shape of tuning devices: not visible
► Style of tuning devices: not visible
► Level of representation: average
► Atypical: no
► Position of musician: sitting
► Handling of instrument: resting on right thigh, neck to the left.
► Plane of the soundboard: flat
► Soundboard medium: wood
► Plane of strings or bridge: flat
► Strings going through the bridge: yes
► Shape of bridge: rectangular bar
► Location of bridge: inferior part of soundboard
► Openwork bridge: yes
► Position of the bridge: continuous
► Shape of the head: scroll
► String-bearer: yes
► Type of string-bearer: string-bearer bridge or bar
► Shape of the string-bearer: handle-bar
► Attachment of string0bearer: other
► size of neck: long
► Instrument played?: yes
► Playing method: plucked with plectrum, fingers on neck
► Plucked: yes
► Hand position: Close to bridge-bearer
► Plectrum: yes
► Visible strings: yes

Example 2 : King David tuning a harp.(fiche n° 39[14])

Information relative to the scene:

► Century: 12th
► Restoration: none
► Object type: illuminated manuscript
► Type: manuscript 246 D, tome 1, folio 1, A. Augustinus Hipponensis, Enarrationes in Psalmos, lettrine B of psalm 1, Beatus vir
► Iconclass: 11I62(DAVID)33, 48C7322
► Curent location: Charleville-Mezieres, Ardennes, France
► Original location: Belval, Ardennes, France
► Original partner: Initial[15]
► Original title: David playing the harp.
► Commentary: the ten strings suggests the arithmetical and divine law of David and of YHWH (Ps. 144 143) Similar to the first strophe of Ps.1 (reference to the theory and musical perfection, divine arithmetic law, referential sound universe,

music of the law). David being the author of the psalms, his music generates the letter. The vegetal is the ordained and growing shape that the Word takes from the work in its shaping of the world. (Musical inspiration source through the image of the vegetal rinceau). The animal's head prolongs the yoke and symbolically pierces the letter circle.

Analogy section:

Detail of the sections and analogies:
Sound section:

► Action of the sound in the image: creation of the letter
► References to the theory and musical perfection: tuning, arithmetical and divine law.
► Musical source of inspiration in the image: vegetal rinceau
► Referential sound universe: music of the Law, learned music. Propagation of sound and markers of hearing
► Formal analogies: body-instrument, instrument-lettrine.
► Chromatic analogies: body-lettrine, clothes.
► Commentary: the shape of the instrument is copied from David's coat (formal analogy 'body-instrument'). The pattern of white dots associates the body of David, on a blue background from which the lettrine is lifted (chromatic analogy 'clothes-configuration of the image'). The neck of the animal which prolongs the yoke of the harp follows the contour of the lettrine prior to piercing through it (formal analogy 'instrument-lettrine'). A twig bearing three fruits bends down from the lettrine and reaches the tuning hammer.

These two examples have the benefit of demonstrating the added value brought up by the *Musiconis* project, either with regard musical performance description, as well as with the understanding of its graphic and symbolic

organisation. Doubtless this work constitutes an effort of source interpretation which can, and must be reviewed, corrected, emendated by the editors of the database, in order to better confront diverging opinions about an iconographic interpretation, or on the realism of one or another organological detail.

Regardless, this indexing model accomplishment, applicable to any Mediaeval musical scenes and its related material was only possible because of a constant and meticulous work of the project team and by the contribution of the many external partners who have attended various seminars and thus provided with essential organological elements. The organological part work could not have been achieved without the help of Lionel Dieu and Christian Brassy from the association *APEMUTAM*[16]. The iconographical part also benefits from the contribution of other Mediaeval musical iconography programmes[17]. The technical part of *Musiconis* is also associated with French Digital Humanities national partners[18].

2. *Musiconis* and Web of data

Technically, the principal innovation of the project is with the sharing of musicological data from various, and sometimes very different, databases. Some are musicological such as *Musicastallis*, and others, of a more general content such as *Initiale, Romane,* or *Gothic Ivories.* It was therefore appropriate to link the data with automated dialogue system between the databases in order to avoid copying or even multiply identical sources. This was made possible by the implementation of automated updates and fruitful exchanges with all partners.

This was achieved mainly through the use of open source tools and formats[19], as it is often the case with the Web of Data. This European practice was initiated by the WC3[20] consortium, thanks to the Europeana project[21].

In computing, linked data (often capitalized as Linked Data) describes a method of publishing structured data so that it can be interlinked and become more useful. It builds upon standard Web technologies such as HTTP, RDF and URIs, but rather than using them to serve web pages for human readers, it extends them to share information in a way that can

be read automatically by computers. This enables data from different sources to be connected and queried [22].

The British researcher Tim Berners-Lee is currently Chairman of the WC3 consortium which provides us with four leading elements to sustain the Web of data[23] initiative with its elements in concordance with *Musiconis.*

1. Usage of unique URI addresses for the identification of musical representations[24].

2. Usage of URI, HTTP addresses which are live on the Web (as an Error HTTP 404 which is interpreted as an unreliable URI and must not be re-used to describe other data).

3. Extraction of human and machine readable data with URI. In our case, titles associated with representations.

4. Addition of external URIs to the data in order to improve the the web indexation of the data. In our case, links towards different partner databases as well as URIs of images on our partners' databases.

So, each site following these rules both harbours external addresses and provides new links. These are mutually synchronised, allow updating and collaborative evolution of shared contents.

Therefore, this system allows to access the same information from different sites, and in the same way, while benefitting from complementary data should any be available.

For example, a representation synchronised from the Initiale database, and accessed through *Musiconis,* will show a certain amount of identical information (date, location, manuscript reference, etc.) and provide a specific musicological content allowing for a better analysis of a scene for the user (names of instruments, organological descriptions, iconographic analysis of the audible elements of the image, etc.

With this system, unique in the field of Mediaeval music, the *Musiconis* project is increasing its potential to reach levels comparable to the Musical Instrument Museums Online *(MIMO)*[25] and by extension, to Europeana.

MIMO was initially founded by a group of 11 European musical instruments museums[26] with the aim of sharing their collections and make them available principally through the *Europeana* portal.

During the financing stage of the project(2009-11), museums undertook photography, descriptions and digitization of their collections. As a result, they offer a search engine with over 50,000 musical instruments from all continents and of various periods. *MIMO* uses a comprehensive search engine[27] which has adopted the Sachs-Hornbostel[28] classification which *Musiconis* also uses. The engine allows for a search of all the instrumental files making it possible to look for the name of a luthier or a specific provenance.

Although the objects in *MIMO* and *Musiconis* are different, it nevertheless seems that interesting links may arise from it. For example, the link of given images of instruments sharing historical and/or organological characteristics, would provide great added value to the users. Thus, a first stage of the partnership with the European scientific communication network could be be shortly operational[29]. This partnership would equally be pertinent to users and interesting for the future of the project. In a wider scope, a partnership with the *Europeana* project would enable a wider broadcasting of *Musiconis* and therefore allow for the exchange of iconographical data with leading libraries who are in partnership with the project as well as with institutions hosting numerous Mediaeval musical representations which would, in this case, benefit from an indexing grid which we have explained above.

Bearing this in mind, it should be agreed that the *Musiconis* data, and more specifically the data sharing service as well as the formats themselves be free, or in other terms, that the whole of the metadata should be indexed under a *Creative Commons CC0 1.0 Universel* [30] licence according to the *Data Exchange Agreement (DEA)* as suggested by *Europeana*[31], and then made available with the dedicated[32] API (*Application Programming Interface*).

Notwithstanding the opening that this partnership could bring to *Musiconis*, its integration to the European portal would also be a way in which to associate, in a wider scope, Mediaeval images on various media as witnesses from the largest unified collections. Indeed with the suggested indexing model *Musiconis* images would become representations of a high definition level allowing for new and more focused requests from users.

This may lead to the association of musical scenes, to musical instruments, but also to treatises, related pictures, musical instruments, information about artists, sponsors, individuals, secular or religious contexts of a scene. Additionally, the advanced research of the *Europeana* portal gives access to numerous formats such as texts, images, sound clips, videos. Such sources could help complement in depth our knowledge of a given performance, its actors, its 'performators'[133] and its instruments.

3. Where would archaeomusicology stand in this project?

Coming back to the original idea of this paper, it would now seem interesting, after having explained in details the contents of the *Musiconis* project, to consider archaeology in this sphere and reflect on its relevance, in our project, perhaps as a direct partner, or as a partner through the European portal.

It is certain that archaeomusicology has its place in the field of Mediaeval organology, iconography and generally in musicology. From the organological standpoint, imagining a possible comparison between Mediaeval instruments and much older instruments; using common search criteria on dozens of instruments from different cultures and periods; comparing similar performers in Mediaeval, Roman or Greek scenes, seems quite relevant to the analysis of musical images - for example, the genesis of their iconographic layout - or with an aim at the observation of organological modifications or consistency such as the change in sizes, of the number of sound-holes, of strings, of handling, etc.

Such a change, or rather such an adaptation, or an expansion, would completely change the basic nature of *Musiconis* and make it evolve towards a more complex and pertinent form if it were possible to adapt to the theoretical and iconographic dimension of the project, to more ancient images.

Could the ancient musical images, rich and abundant be subjected to the same theoretical rules to which their neighbouring Mediaevals are? The answer to this question seems obvious since all systems of iconographic representation is ruled by laws or by reasons which infer the meaning of the whole of a representation in order to provide

it with a specific meaning.

Which researchers will therefore be able to create, evaluate, complement such an analytical grid? Furthermore, is it not necessary to implement one or more grids according to periods and aesthetics under scrutiny? This question is for archaeologists and ancient art historians to answer.

Otherwise, since images of singing or dancing musical performance appear on mediaeval material, it should be essential to plan for a particular field of archaeomusicology which is the study of ancient musical theory. Indeed this research field is widely represented among scholars, particularly in Europe, and works arising from these researches will, without any doubt, provide us with pertinent explanations on the interpretation of mediaeval images and in particular when these are related to Mediaeval music theory[34] (for example, scene 198 'Pythagoras playing the lute' from the stalls at the cathedral of Ulm[35], or scene 37 'King David tuning a harp, musicians playing chimes' from an illumination of the Angers manuscript MS47, folio 3[36]).

The possibility of such an extension and such a partnership implies a series of methodological questions unavoidable: which partners, - institutional, scientific, technical - to associate to the project? How would the fields already implemented in the indexing model be adopted or adapted? How should we integrate the diversity of supports and techniques arising from archaeological representations?

It would appear reasonable to assume that existing partners, or at least existing institutions currently involved in digitizing work, could help answer these questions.

Indeed, leading European national museums having already part of their collections photographed, could help test the evolutions of extant systems in apposition to examples lifted from diverse cultures or periods and therefore refine and enlarge the extant system.

The partnership in motion with *MIMO* would allow also to deal with the instrumentarium question. Since this portal already regroups a great diversity of instruments from archaeological excavations in world-wide sites, and that these instruments have already been classified according

to the Sachs-Hornbostel system, it would be easier to integrate them to our own extant Mediaeval instrumentarium.

The question as to the relevance of fields appears more problematic. If the current indexing model relies on a description as accurate as possible of Mediaeval images, it would seem difficult to use the same for images arising from diverse cultures and periods. We could suggest a specific indexing for each culture or period, such as Roman antiquities; Greek antiquities; Egyptian antiquities, etc., perhaps with common fields, others would be complementary, within a table of data which would be included into the database. This indexing question infers, obviously the matter of materials and techniques. Here, again, digitization undertaken by leading museums (Base Joconde du Ministère de la Culture française[37], digitized collections of the British Museum[38], etc), allow to focus on such a question.

However, It does not seem necessarily pertinent to enlarge the *Musiconis* project to archaeological iconography.

As we have seen, the contemporary movement of Digital Humanities seems to point out towards a network of specialized partners rather than toward a unique encyclopaedic project. *Europeana* is a convincing proof of the relevance of this solution: it harvests various databases, allowing complex queries, whithout storing each separate data in a single place.

The idea of a great and specific archaeomusicological portal, similar to *Musiconis*, although totally adapted to the needs of archaeomusicologists appears much more pertinent. The linkage, in due time, of this portal within *Europeana*, and by extension to *Musiconis*, would allow each individual user/partner to find what they seek from this shared data.

It seems that this solution should be adopted, especially since archaeomusicology groups expand while sharing their research work as well as their discoveries[39].

Let us come back to the initial question of this short paper: what is the place of archaeomusicology within the *Musiconis* project?

It seems therefore pertinent to propose the following answers:

An important role exists within this project devoted to the analysis of Mediaeval musical performance, for archaeology, because the more ancient images, instruments and performance provide us with an amount of information extremely pertinent for the understanding of a given scene.

This role does not place itself directly in the *Musiconis* project, but it would be more likely that it became a privileged partner, developing with the same standards similar to those of *Europeana*.

It appears equally necessary to create one or more archaeomusicology portals which would regroup archaeomusicologists, musicologists, curators and librarians, art historians, but also music professionals.

This vast project still needs to be implemented and at each of its steps, *ICONEA* could have its central role on the basis of its expertise about these questions and its network of specialists. The association of archaeomusicology to leading institutional partners, will place it in its own sphere in the digital landscape of scientific diffusion. This will be the right time for *Musiconis* and *ICONEA* to share and collectively contribute to their respective projects.

Notes

1. The *Musicastallis* database presents over 850 carved musical scenes on the Mediaeval stalls in European churches: http://www.plm.paris-sorbonne.fr/musicastallis/index.php.

2. Projet chosen by the *Agence Nationale de la Recherche* and benefitting from funding between 2011 et 2015 for the building of a database and related activities to the project such as lectures, seminars, conferences, international colloquia, exhibitions, scientific and technical diffusion.

3. EA 4087, Head of project: Professor Frédéric Billiet.

4. EA 4509, Head of project: Professor Claude Montacié.

5. UMR 7302, Head of project: Dr. Isabelle Marchesin.

This postulate arises from Isabelle Marchesin's researches on the Mediaeval musical iconography. See: Marchesin, Isabelle: L'Arbre et la Cité. Sémiotique du discours visuel de la porte de bronze de Hildesheim, projet de publication accepté par les Editions Beauchesne, forthcoming; L'image organum: la représentation de la musique dans les psautiers médiévaux, 800-1200. Turnhout : Brepols, 2000, http://www.worldcat.org/oclc/406874579; Les chapiteaux de la musique de Cluny: une figuration du lien musical. Les Représentations de la Musique au Moyen Âge. 2005 : 84-90, http://www.worldcat.org/oclc/605414937.

7. The team at the core of the project development of the partnership is composed of two post doctoral scholars benefitting from an ANR contract: Welleda Muller and Sebastien Biay, as well as with Benjamin Pavone, an information technology engineer and web designer Jérôme Parbaille. There are three supervisors who expand the project towards researchers and contributors.

8. The section is divided into sub-sections: action of sound in the image; nature of the sign; visual metaphor; references to theory and to the musical perfection; reference to instrumental classification; referential universe of the sound; propagation of

the sound and markers of audition.

9. They may be chromatic, arithmetic, formal, etc.

10. Support, iconographic programme, literary or histioric reference, etc.

11. http://musiconis.paris-sorbonne.fr/fiche/41/Trois+anges+jouant+du+luth+et+de+la+harpe

12. *Iconclass* is a classification system devised for art and iconography. It is a tool used for the description of represented subjects in pictures such as art pieces, book illustrations photographic reproductions. It is used by numerous museums and patrimonial institutions world-wide: such as art objects, book illustrations, reproductions, photographs, etc. It is used world-wide: http://www.iconclass.org/

13. http://www.plm.paris-sorbonne.fr/musicastallis/fiche.php?id=29

14. http://musiconis.paris-sorbonne.fr/fiche/39/Roi+David+accordant+une+harpe

15. http://initiale.irht.cnrs.fr/decors/decors.php?imageInd=1&id=331

16. Association pour l'étude de la musique et des techniques dans l'art médiéval, http://www.instrumentsmedievaux.org/apemutamsite/ This Association includes organologists, musicologists and archaeomusicologists, historians, luthiers, working on Mediaeval instruments (studies and replications).

17. For example, the association *Misericordia International* including art historians, philologists and musicologists working on choir stalls and their iconography: http://www.leedstrinity.ac.uk/departments/english/misericordia/Pages/default.aspx - la Bibliothèque Nationale de France - http://www.bnf.fr - Centre André Chastel, research laboratory (CNRS) in art hiistory including several teams working on 'thèmes fédérateurs': l'artiste, Paris, iconologie du paysage et l'histoire de l'art et ses limites: questions épistémologiques: http://www.centrechastel.paris-sorbonne.fr - The François Garnier Centre, Meetings with the religious patrimony having several aims: formation, organisation of colloquia, publication, inventories: http://rencontre-patrimoine-religieux.blogspot.fr - l'Index of Christian Art (Université de Princeton), Indexing of Christian art on all types of artistic materials: http://ica.princeton.edu - Institut de recherche et d'histoire des textes, Unité de recherche du CNRS sur le manuscrit médiéval et la transmission des textes de l'Antiquité à la Renaissance: http://www.irht.cnrs.fr - *Répertoire International d'Iconographie Musicale*, index international des sources visuelles de la musique - http://www.ridim.org/title.php

18. This is the case for the 'Cap digital Pôle de compétitivité' which has accepted the *Musiconis* project on grounds of its innovative dimension in the field of human sciences: http://www.capdigital.com

19. Web site and database in the PHP-MySQL format using Framework Symfony. Exchange of data with XML format by webservice and automatised updates programmed on a daily basis.

20. http://www.w3.org

21. http://pro.europeana.eu/linked-open-data

22. Berners-Lee, Tim / Bizer, Christian / Heath, Tom, Linked Data - The Story So Far. International Journal on Semantic Web and Information Systems, 2009 (5/) : 1–22.

23. *Ibid.*

24. Using the redirection tool HTTP (code 302) and the variable User-Agent written in the headings of the HTTP quiries, a serveur can display an XML/RDF page for an engine or for a HTML.

25. www.mimo-db.eu

26. MIMO to this day includes the following: University of Edinburgh, Germanisches Nationalmuseum, Museum für Musikinstrumente der Universität Leipzig, Koninklijk Museum voor Midden-Afrika, Associazione 'Amici del Museo degli Strumenti Musicali,', Cité de la musique, Muziekinstrumentenmuseum, Ethnologisches Museum Berlin, Musik/Teater Museet Stockholm.

27. http://www.mimo-db.eu/MIMO/infodoc/ged/search.aspx?geid=IFD_REFDOC_GR_ADVANCED_3

28. A translation of German into French of this classification is given by Nicolas Meeùs: http://www.plm.paris-sorbonne.fr/IMG/pdf/classification.pdf

29. Exchanges between supervisors of both project have taken place in Paris and will lead to partnership with: the University of Edinburgh, Germanisches Nationalmuseum, Museum für Musikinstrumente der Universität Leipzig, Koninklijk Museum voor Midden-Afrika, Associazione 'Amici del Museo degli Strumenti Musicali,' Cité de la musique, Muziekinstrumentenmuseum, Ethnologisches Museum Berlin, Musik/Teater Museet Stockholm.

30. http://creativecommons.org/publicdomain/zero/1.0/deed.fr

31. http://pro.europeana.eu/web/guest/data-exchange-agreement

32. This API is accessible at: http://pro.europeana.eu/api; for a technical description of the data format, see: https://docs.google.com/spreadsheet/ccc?key=0AsHgkgfrIiQ3dHRNaFpGeHVUNFJMazd6WkVEQ21NeHc#gid=0

33. This neologism has been kept in the project to describe ant individual taking part in a performance with music: musicians, dancers, singers, audience, etc.

34. At present, over 25 representations of the *Musiconis* database refer to Mediaeval musical theory. However, this number is restricted to images which are fully indexed. It seems logical to believe that this number will increase with the expansion of the corpus.

35. http://musiconis.paris-sorbonne.fr/fiche/198/Pythagore+jouant+du+luth

36. http://musiconis.paris-sorbonne.fr/fiche/37/Roi+David+accordant+une+harpe%2C+musicien+jouant+du+carillon

37. http://www.culture.gouv.fr/documentation/joconde/

38. http://www.britishmuseum.org/research/collection_online/search.aspx

39. For projects and groups of researchers posting their work Online, see:
- ICONEA, International Conference of Near and Middle Eastern Archeomusicology: http://www.iconea.org/
- The International Study Group on Music Archaeology (*ISGMA*) : http://www.musicarchaeology.org
- The European Music Archaeology Project (*EMAP*): http://ambpnetwork.wordpress.com/2013/06/06/european-music-archaeology-project-emap/
- The Moisac Society (International Society for the Study of Greek and Roman Music and Its Cultural Heritage) : http://www.moisasociety.org/
- Lucy to Language: The Archaeology of the Social Brain Research Project : http://www.liv.ac.uk/lucy2003/

THE LUTE IN MEDIAEVAL MUSICAL ICONOGRAPHY:
Handling, postures and playing techniques.

Frédéric Billiet

Fig. 1, Pythagoras playing the lute in a stall at the cathedral of Ulm, Germany.

Following our presentation of the *MUSICONIS* database, a research example is proposed here, within the theme of the 2011 London *ICONEA* conference.

The lute will be the object of our experimental interrogation of *Musiconis* specifically about positions and playing techniques of the lute, observed from a more comprehensive corpus of Mediaeval choirstalls[1].

One must be made aware that a Mediaeval image is by no means an exact depiction. It would not be recommended to build a lute from a Mediaeval image, even if its details are of great precision. However, a luthier may find inspiration from the shape and certain details of the depicted instrument for some form of replication. Even if the instrument appears realistic in its proportions[2], such as the lute carved in the stalls at the cathedral of Ulm, (Fig. 1) the luthier is lacking essential information about the choice of wood essences, thickness of soundboards, sound-boxes, or of 'endostructures' and other invisible parts.

The luthier must also take care of the coherence of the parts of the instrument which are intended to marvel the viewer. The carver could have increased the proportions of a lute in relation to the player in order to enhance it in the scene. Similarly the number of the strings might be more symbolical than realistic. During the Middle-Ages, an artist would easily depart from the proportions of the model[3] in favour of the iconographic discourse. It is therefore always in the interest of the researcher to confront images with archaeological data collated by archaeomusicologists, when such are available.

The consultation of a database such as *Musiconis* allows researchers to compare presented instruments but also to observe important details for the iconographists to attempt at interpreting them since the 'imagists' also had the urge to represent the sound of the images[4]

and therefore depicted details which were directly linked to sound production, such as a plectrum, rings on a triangle, bray pins on a harp[5], snares on the tight skin of some percussion instrument.

Fig. 2. King David playing a gothic harp showing bray pins. Choir stalls, Leon, Spain.

The increasing number of indexed images in *Musiconis* will allow for the comparison of representations. Additionally, the user will be able to note occurrences of specific details and observe fashions in the manners in which the lute was played, as we have tried to illustrate.

The *Musicastallis* database regroups musical scenes representations on Mediaeval stalls in Europe between 1250 and 1550 which will also in 2013 be indexed in *Musiconis*. This specialised database holds about 1,000 images related to musical representations on over 10,000 images in the stalls still accessible in churches and museums[6]. Altogether, there are 85 scenes including lutes in this particular West-European corpus, from which we may draw the conclusions below.

Localisation and context

In its Occidental Mediaeval form, the lute is represented in all West-European countries where groups of stalls with misericords are preserved. The number of representation per country does not produce any reliable data on the diffusion during the Middle-Ages because too many of them have been destroyed[7]. It would not be safe, either, to consider that the number of 85 lutes registered among the 960 musical representations on stalls, as significant. Therefore the percentages which follow must not be considered as tendencies since the corpus remains very lacunal.

During the Middle-Ages the lute is always in the hands of someone who brandishes, presents, tunes or plays it while in following periods the instrument will often be represented as isolated object, or assembled in an allegoric bundle, or even in a vanitas[8] scene. Lutanists are men in 30% of cases, women in 1%, angels in 62%, animals in 2%, hybrids in 1% and putti in 4%.

The context of the usage of the lute during the Mediaeval iconography is either Biblical, allegoric or linked to daily life. It is worth mentioning one or two cases where the lutanist is depicted tuning his instrument[9].

Fig. 3. Un lutanist tuning his instrument. Misericord from Saint-Chamant, France.

Plectrum playing

The comparison of lutanists' playing between 1250 and 1550 reveals that the plectrum is mostly used during the Middle-Ages. The plectrum is depicted on stalls from 1370 to 1490 in most of its representations. The way in which they play suggests monody and loudness, but a mixed playing with a plectrum for the melody and finger accompaniment is possible. Playing with fingers is not shown on stalls until 1398 and is notably more frequent along with the emancipation of instrumental music linked to the will of lutanists to play contrapunctal vocal works [10].

Thumb placed on the neck

The emergence of the thumb of the left hand[11] above the neck is also observed. This is probably the same technique used up to now by saz players of Turkey who press the bass string with their left hand thumb[12] to change its pitch. This implies that the neck was relatively narrow and the addition of strings from the XVIth century will make the technique more difficult. However, it might be that the carver had only intended to place the hand behind the neck with fingers on both sides (thumb up and fingers down), sometimes crudely with fingers too long and unequal arm length...

Fig. 4. Left hand thumb playing. Misericord from stalls at Kinstanz, Switzerland.

Handling of the instrument

The lute can be played sitting or standing, with or without a baldric. Ethnomusicologists have shown that any posture is possible in cultures where the academic norm is an unknown dimension. The Afghani saz player in Azerbaijan[13] 'plays', theatrically, with his instrument as would, 'doubtless' the Middle-Ages acrobat-musicians. Ethnomusicologists have also pointed out the gestural importance which, had it been better identifiable from the images, would have allowed for this cataloguing: *'gestural affecting the flux, the rhythm or rhythmical formulae (inciting dancing), expressive gestural underling the melodic line, and the heroic, acrobatic, of the autonomous gestural of the epic bard, which would have been*

suggestive or simply choreographic, of the lute player. Musicians from all origins share the same physical predispositions as is suggested by means of frequent references to the Occidental musical culture. However, their aesthetical choices translated by deep contrasts between, for example, the image of the body in the course of performance, may it be dynamic or static, the contact with the instrument (making one with the player but held away, to express the rider and his horse), rhythmical forms (directly stemming from the gestural) and the time notion which follows, playing technique, layout arrangement of the instrument, etc.[14]'

Systematic comparisons about the handling of the instrument, and specifically of the orientation of the neck could also bring elements about the type of repertoire inferred by the carver. The neck pointing high would have suggested learned music. The same applies to the handling of the classical guitar in the modern period.

Fig. 5. Lutanist with neck pointing high. Misericord from Stendhal stalls, Germany.

The neck pointing downwards might have suggested more popular, free music. When depicted on stalls, the neck is usually held horizontally. However, this does not lead to more in depth analysis since the playing of the vielle is much more contrasted.

Lastly, some representations allow for the observation of the strings plucking angle. Generally, the playing with a plectrum implies a strictly perpendicular attack in relation to the soundboard while playing with fingers is more comfortable when the soundboard is slightly orientated towards

the vision of the musician allowing for a better control of finger position.

These tendencies detected from the observations of 85 representations of lutanists in the *Musicastallis* database will be submitted to a larger corpus which includes representation of the musical sound in illuminations, sculptures and paintings indexed in the *Musiconis* database. These will be made progressively available with the collaboration of *Musiconis* scientific partners[15] and the funding of the Agence Nationale de la recherche.

Notes

1. The comprehensive corpus of musical representations on Mediaeval stalls indexed in the *Musicastallis* database of the Paris-Sorbonne University is accessible from the *MUSICONIS* portal.

2. Lute carved on the stalls at the cathedral of Ulm.

3. The model can be a borrowed instrument for the artist to carve, a representation of the instrument on a sketch book collection of models for artists, or the instrument memorised by the carver.

4. Billiet, Frédéric, 'La représentation de la musique dans les stalles médiévales européennes', in Michèle Barbe (éd.). *Musique et arts plastiques: quels rapports ?*, éd. Michèle Barbe, Paris, Presses de l'Université Paris-Sorbonne, p. 9-20.

5. See the bray pins on the harps, stalls of León, Spain.

6. The photographs of these misericords are accessible from the site of the Index of Christian Art of the University of Princeton.

7. In the *Musiconis* database, the representations of the lute are more frequent in France with (72/123) than in Germany (10/123) and other European countries.

8. See Billiet, Frédéric, *'La représentation de la musique dans les stalles médiévales européennes', op. cit.*, p. 9-20.

9. A lutanist tunes his instrument on a stall misericord at Saint-Chamand in France. A woman tunes an instrument on the Munster stalls, Germany. However, the instrument could be a vielle.

10. Playing with the plectrum happened to last longer in Great Britain.

11. The playing, left or right handed is to be taken in consideration during a period when the postural standardisation was not thought of. Only the comfort of the musician would be taken in consideration for his most suitable position to enhance his virtuosity. However, one must not underestimate inversions used to symbolise the world 'upside down' and the confusions due to printed models.

12. The demonstration was given at the Sorbonne by our colleague and saz player, Jérôme Cler.

13. For example Adalat Nasibov, saz player whom Jean During introduced to us.

14. During, Jean, 'Hand Made. Pour une anthropologie du geste musical', *Cahiers d'ethnomusicologie*, 14, (2001), 39-60.

15. See http://musiconis.blogspot.fr/